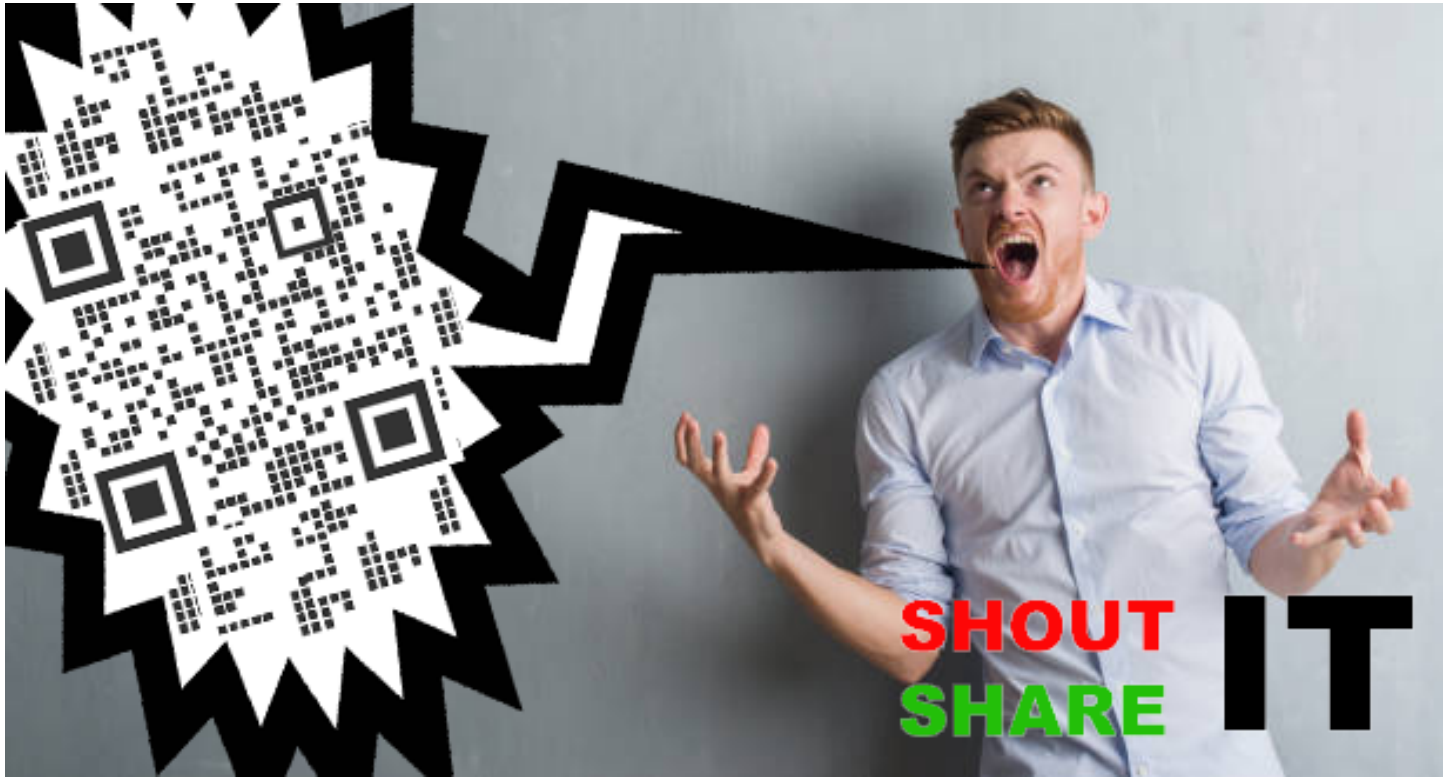


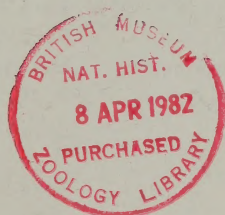


28 71

BULLETIN
of the
BRITISH
ORNITHOLOGISTS' CLUB

EDITED BY
DR. J. F. MONK

Volume 101
1981



PREFACE

It has been possible to publish more pages in Volume 101 than originally expected. This has resulted from the very satisfactory response to promotion of sales of the *Bulletin* initiated and carried out by the Hon. Secretary. The *Bulletin* is now being subscribed for more widely than ever before in its history, a reflection which must prompt gratitude in any editor for the high standard of submissions from authors which allows such a development to occur, especially during an economic depression.

While I was abroad from April to early September, the Club was very fortunate to be able to call on the services of C. W. Benson and his long experience with the *Bulletin*. I am most grateful to him for seeing the June and September issues into print and for editing with his usual expertise some of the papers, as well as others submitted during my absence, in addition that is to his own heavy load of work at Cambridge.

This is the first year that J. H. Elgood has compiled the index and we are indebted to him for performing this important but generally thankless task.

I am, as always, delighted to be able to thank referees, authors and the printers for their patience and co-operation over the last twelve months.

JAMES F. MONK

COMMITTEE

1980-1981

D. R. CALDER, *Chairman* (1980)
B. GRAY, *Vice-Chairman* (1980)
Dr. J. F. MONK, *Editor* (1976)
R. E. F. PEAL, *Hon. Secretary* (1971)
MRS. D. M. BRADLEY, *Hon. Treasurer* (1978)
C. F. MANN (1977)
R. D. CHANCELLOR (1979)
J. G. PARKER (1979)
R. A. N. CROUCHER (1980)

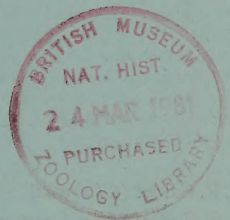
1981-1982

D. R. CALDER, *Chairman* (1980)
B. GRAY, *Vice-Chairman* (1980)
Dr. J. F. MONK, *Editor* (1976)
R. E. F. PEAL, *Hon. Secretary* (1971)
MRS. D. M. BRADLEY, *Hon. Treasurer* (1978)
R. D. CHANCELLOR (1979)
J. G. PARKER (1979)
R. A. N. CROUCHER (1980)
Rev. G. K. McCULLOCH, O.B.E. (1981)

Bulletin of the
British Ornithologists' Club



Edited by
Dr. J. F. MONK



FORTHCOMING MEETINGS

Tuesday, 19 May 1981 in the Senior Common Room, South Side, Imperial College, Prince's Gardens, S.W.7 at 6.30 p.m. for 7 p.m. Mr. C. F. Mann, joint author of *The Birds of East Africa*, published last year, will speak on *Forest Birds in Kenya*. Those wishing to attend should send their acceptance with a cheque for £4.95 a person to the Hon. Secretary at 2 Chestnut Lane, Sevenoaks, Kent TN13 3AR (telephone Sevenoaks [0732] 50313) to arrive not later than first post on Thursday, 14 May.

Tuesday, 7 July 1981 at the same venue and time Mr. J. H. Elgood will speak on *The Birds of Nigeria*.

Tuesday, 15 September 1981 speaker being arranged.

Tuesday, 17 November 1981 Mr. Peter Hayman.

Tuesday, 12 January, 1982 Dr. T. J. Seller.

Tuesday, 2 March 1982 Professor Gordon Orians.

Gifts or offers for sale of unwanted back numbers of the *Bulletin* are very welcome

The Club has no reference copies of Vol. 48 and many earlier issues; these would be very specially appreciated

COMMITTEE

D. R. Calder (*Chairman*)
R. E. F. Peal (*Hon. Secretary*)
Dr. J. F. Monk (*Editor*)
J. G. Parker
R. A. N. Croucher

B. Gray (*Vice-Chairman*)
Mrs. D. M. Bradley (*Hon. Treasurer*)
R. D. Chancellor
C. F. Mann

Bulletin of the BRITISH ORNITHOLOGISTS' CLUB

Vol. 101 No. 1

Published: 20 March 1981

ANNUAL GENERAL MEETING

The 1981 Annual General Meeting of the British Ornithologists' Club will be held in the Senior Common Room, South Side, Imperial College, Prince's Gardens, London, S.W.7 at 6 p.m. on Tuesday 19 May 1981.

AGENDA

1. Minutes of the last Annual General Meeting (*Bull. Brit. Orn. Cl.* 100 : 135).
2. Report of the Committee and Accounts for 1980.
3. *The Bulletin*.
4. Election of Officers. The Committee proposes that:
 - (a) Mrs. D. M. Bradley be re-elected Honorary Treasurer,
 - (b) Mr. R. E. F. Peal be re-elected Honorary Secretary,
 - (c) The Reverend G. K. McCulloch, O.B.E., be elected a member of the Committee *vice* Mr. C. F. Mann, who retires by rotation.
5. Any other business of which notice shall have been given in accordance with Rule (7).

By order of the Committee,
RONALD E. F. PEAL
Honorary Secretary.

REPORT OF THE COMMITTEE FOR 1980

In 1980 there were 41 new Members, 6 Members resigned and 6 were struck off under Rule (4). There was a gratifying rise of over 10% in the paid-up membership to 342 (including 6 Honorary Members) and there was an increase of 14% in non-member subscribers to the *Bulletin*, who numbered 159 at the close of the year.

It is with deep regret that the Committee reports the deaths of Miss Phyllis Barclay-Smith, C.B.E., Member 1933-1980, Dr. L. H. Brown, O.B.E., Ph.D., Subscriber/Member 1974-1980 and Mr. E. R. Parrinder, C.B.E., Member 1945-1980, all well-known and much-liked Members. Dr. Brown was the speaker in May last when he drew a large attendance on a subject near to his heart.

Meetings were held in the Senior Common Room, South Side, Imperial College in January and alternate months thereafter: A special meeting in April, with an enlarged programme to mark the hundredth volume of the *Bulletin*, saw an attendance of 71, the largest for over 20 years. In May there was held, in addition, the first recorded Meeting of the Club outside London, the Harrison Zoological Museum and the Sevenoaks Wildfowl Reserve being visited. Numbers at the six customary Meetings were a little more than in 1979 and attendances for all Meetings totalled 306, the most since 1962. Charges for dinner rose from £4.30 in January to £4.75 in November.

The Club was accepted by the Charity Commission for registration as a charity during the year.

Captain Collingwood Ingram, who joined the Club in 1901, had his 100th birthday on 30 October 1980. A card depicting White's Thrush *Zoothera dauma*, specially drawn by Mr. R. Hume, was sent with the Club's good wishes.

Dr. David Harrison and Mr. J. H. Elgood both kindly presented the Club with back numbers of the *Bulletin*, Dr. Harrison giving over 2,000 copies, which are much appreciated. Gifts or offers of *Bulletin* back numbers are most welcome and the Club is especially in need of Vol. 48 and before, as there are very many of these issues of which the Club does not possess a copy.

Despite the strength of sterling, inflation continued at a very high rate, with postage costs up 41% on 1979 and printing charges up 15%. A larger *Bulletin* circulation would help much to contain costs and it is hoped that Members, who are in touch with institutions that do not obtain the *Bulletin* and should hold it, will encourage them to subscribe.

1980 was notable for publication of Volume 100 of the *Bulletin*, a special issue of which was published in March, consisting of 132 pages, with a special front cover amusingly

designed by Robert Gillmor and a back cover with reproduction of the first issue of the *Bulletin* describing the Inaugural Meeting of the Club on 5 October 1892 and of the programme of the joint meeting of the BOU/BOC at dinner on 8 March 1939. The latter was referred to as the "last of an era" by the late Phyllis Barclay-Smith in her reminiscences, which together with those of 7 other of the Club's most senior members formed a most entertaining and intriguing section of the issue. It was sad that 3 of these members, Miss Barclay-Smith, Dr. David Bannerman and Baron de Worms, had died before their contributions were published.

The second and major half of the issue was devoted to papers on the advances of ornithology in the past half century and covered in 18 important zoo-geographical reviews a worldwide scene, omitting unfortunately Scandinavia, the Middle East and the Pacific. The Editor is very glad to be able to thank the authors for their ungrudging co-operation, involving them in considerable work and research as well as calling on their expertise on behalf of the Club.

The issue opened with the Chairman's Foreword, in particular thanking The Royal Society, the Mount Trust, the B.O.U. and British Petroleum Co. Limited for their generous financial support. This was followed by a short and enlightening history of both the Club and the *Bulletin* by the Hon. Sec., Ronald Peal, and for once a lucid explanation was given as to why the Club's centennial volume and the Club's centenary do not coincide.

The year's remaining 3 issues of the *Bulletin* consisted of 106 pages and happily have covered much the same scale of subjects as in recent years. With one exception (Vol. 53) Vol. 100 was the largest annual volume of the *Bulletin* in the history of the Club. Delay in publication has inevitably been increased by devoting one issue to invited papers, but it seems likely that the delay in 1981 will not be greatly longer than the usual 6-9 months.

The audited accounts for 1980, which are not yet available, will be tabled at the Annual General Meeting and published in a later number of the *Bulletin*. Members wishing to see a copy may enquire from the Honorary Treasurer.

The seven hundred and thirty-second Meeting of the Club was held in the Senior Common Room, South Side, Imperial College, London, S.W.7 on Tuesday 13 January 1981. The attendance was 30 Members and 10 guests.

Members present were: D. R. CALDER (*Chairman*), Captain Sir THOMAS BARLOW, K. BRETTON, Dr. G. BEVEN, Mrs. DIANA BRADLEY, Dr. R. A. CHEKE, R. CHANCELLOR, P. J. CONDER, S. CRAMP, The Earl of CRANBROOK, O. J. H. DAVIES, R. J. FARMER, A. GIBBS, D. GRIFFIN, P. HOGG, M. J. L. HURWOOD, A. M. HUTSON, Revd. G. K. McCULLOCH, C. F. MANN, Dr. J. F. MONK, E. M. NICHOLSON, R. E. F. PEAL, P. S. REDMAN, P. J. SELLAR, S. A. H. STATHAM, M. R. TAYLOR, K. V. THOMPSON, A. VITTERY, J. F. WALSH and Lieut.-Col. T. C. WHITE.

Guests present were: Mrs. G. BEVEN, D. BRADLEY, Miss SARAH CONDER, Mrs. P. HOGG, Mrs. I. McCULLOCH, B. V. M. O'BRIEN, W. H. PARK, Mrs. R. E. F. PEAL, R. W. TURNER and Mrs. B. VITTERY.

Mr. Stanley Cramp, O.B.E., spoke on "Ornithology and Conservation in Europe". In the course of his interesting address he dealt especially with the recent E.E.C. Directive on bird protection.

A note on Bensch's Rail *Monias benschi* from Madagascar

by D. A. Turner

Received 28 April 1980

Rand (1936) describes Bensch's Rail as "a terrestrial bird of the low brush forest in the Sub-desert", commenting that there was no evidence at all that it ever flies. Later Milon *et al.* (1973) merely comment that like other members of the family it flies poorly and always seems to prefer to escape from danger by running away, no matter what degree of danger facing it.

During the past 10 years I have had the opportunity of spending many hours observing this species in southwestern Madagascar where its range

appears to be restricted to the dense *Didiera* woodland between two rivers, the Mangoky and the Fiherenana. Over much of the area it is common and at times abundant, and once its distinctive call is known, it is quite easy to locate as small groups move about through the dry *Didiera* woodland that is so characteristic of the southwestern corner of the island.

In the evening of 19 February 1980 while walking through an area of dense *Didierea* thicket some 28 km north of Tulear, I heard a group of these birds calling, but for some time was unable to locate them, until quite unexpectedly I noticed a pair calling from the lower branches of a tree 10–12 feet above the ground. This in itself surprised me as I too had always believed them to be entirely terrestrial in habits. The pair continued to climb around the branches of the tree despite their rather ungainly gait, constantly bobbing up and down just as they do when walking through the brush. As dusk was fast approaching I assumed the birds were settling down to roost for the night, but after a few moments and obviously aware of my presence less than 20 yards away they became rather agitated and to my utter amazement flew away.

Whereas the female flew down to the ground with a rather weak flight, the male flew strongly and purposefully on an almost direct flight for some yards until lost from sight in the dense brush. This is, as far as I can ascertain, the first instance of this species, or any Mesite actually flying, and certainly disproves all previous statements that *Monias benschi* is a flightless bird. Although not in any way related to the Rallidae, all three Mesites of Madagascar possess well developed wings, and it seems probable that all are quite capable of flight, but that due to their being terrestrial birds of either forest or dense scrub they rarely need to do so.

References:

- Milon, P., Petter, J. J. & Randrianasolo, G. 1973. Faune de Madagascar, XXXV Oiseaux. ORSTOM Tananarive: CNRS Paris.
- Rand, A. L. 1936. The distribution and habits of Madagascar birds. *Bull. Amer. Mus. Nat. Hist.* 72: 143–499.

Address: D. A. Turner, P.O. Box 48019, Nairobi, Kenya.

© British Ornithologists' Club 1981.

A new subspecies of *Anairetes agraphia* (Tyrannidae) from northern Peru

by Thomas S. Schulenberg and Gary L. Graham

Received 14 April 1980

In 1978 we were part of a field party from the Louisiana State University Museum of Zoology (LSUMZ) that conducted an ornithological investigation of the previously unexplored mountains lying between the Ríos Utcubamba and Chiriaco, in the Department of Amazonas, northern Peru. This range, known locally as the Cordillera Colán, rises above the arid Río Marañon valley to an elevation of at least 3450 m. At approximately 3050 m, cloud forest gives way to *pajonal*, a wet grassland with scattered bushes and low trees. In the upper reaches of the forest, from 2950 m up to treeline, we

collected a series of *Anairetes* (= *Uromyias*) *agraphia*. (See Traylor (1977) on reasons for merging these genera.) Prior to 1978, this Peruvian endemic was known only from the Quillabamba – Ollantaitambo area of the Río Urubamba drainage, Department of Cuzco (Chapman 1919, Parker & O'Neill 1980); from the Cordillera Vilcabamba, Department of Cuzco (Weske 1972); and from the Cordillera Carpish, Department of Huánuco (O'Neill & Parker 1976). In 1979 another LSUMZ field party collected a specimen at Mashua, 3350 m, east of Tayabamba on the trail to Ongon, Department of La Libertad, about half way between the Cordilleras Colán and Carpish.

The Cordillera Colán population appears to be a well-marked new subspecies that we propose to call:

***Anairetes agraphia plengei* subsp. nov.**

Type: Adult male (skull 60% ossified); Louisiana State University Museum of Zoology No. 88474; Cordillera Colán, NE La Peca, about 5°34'S, 78°19'W, Department of Amazonas, Peru, elevation 3025 m; 29 August 1978; collected by T. S. Schulenberg; original number 988.

Diagnosis: Breast pattern similar to *A. agraphia squamigera* O'Neill & Parker in having the breast feathers tipped as well as edged with white. Differs from all known populations of *A. agraphia* by the following characters: upperparts, especially back, and all but outer pair of retrices dark olivaceous-brown, not warm buff-brown; background colour of breast whiter with no yellow tinge; sides of breast greyer without a yellow-brown tint; belly whiter, extent and intensity of yellow much reduced.

Measurements of the type (mm): Wing (chord) 57.3, tail 66.4, tarsus 18.3, culmen from base 13.7; weight 10 g.

Range: Known only from the type locality.

Specimens examined: *Anairetes agilis* (20). Colombia, 6 unsexed (American Museum of Natural History = AMNH 132238, 143574–143575, 176544, 499063–499064); Ecuador, 11♂♂ (AMNH 124625–124626, 124623, 173410–173411, 180462, 183992, 499057–499058, 499060–499061), 2♀♀ (AMNH 499059, 499062), 1 unsexed (AMNH 145874).

A. agraphia agraphia (11). Dpto. Cuzco, Peru: Cordillera Vilcabamba, 12°36'S, 73°30'W, 4♂♂ (AMNH 820544–820547), 1♀ (AMNH 820548); Cordillera Vilcabamba, 12°37'S, 73°33'W, 1♂ (AMNH 820398), 3♀♀ (AMNH 820399, 820448, 820460); 24 km NE Abra Málaga, 1♂ (LSUMZ 78796); San Luís, 1♂ (LSUMZ 78797).

A. agraphia squamigera (2). Dpto. Huánuco, Peru: Bosque Cutirragra, 1♂ (LSUMZ 74301, holotype); Punta de Esperanza, 1♂ (LSUMZ 79704).

A. agraphia squamigera > plengei (1). Dpto. La Libertad, Peru: Mashua, 1♂ (LSUMZ 92837).

A. agraphia plengei (5). Dpto. Amazonas, Peru: Cordillera Colán, 4♂♂ (LSUMZ 88470, 88472–88474), 1♀ (LSUMZ 88471).

Etymology: It is a pleasure to name this new flycatcher for Manuel A. Plenge, in recognition of his contributions to our knowledge of Peruvian birds, and of the assistance he has so generously offered visiting ornithologists.

Remarks: The specimen from Mashua (LSUMZ 92837), a locality geographically between the type localities and known ranges of *squamigera* and *plengei*, resembles *squamigera* ventrally, but dorsally the characters approach *plengei*. A specimen of *squamigera* from Huánuco (LSUMZ 79704) shows some reduction in the intensity of yellow on the abdomen, but not enough to fall within the known variation of *plengei*. There appears to be no significant size variation within the species.

In addition to the 5 skins from Cordillera Colán, we preserved 3 complete (LSUMZ 90079–90081) and 2 partial (LSUMZ 88470, 88474) skeletons. The LSUMZ also contains a previously unreported alcoholic specimen (LSUMZ 76902) collected at Punta de Esperanza, Department of Huánuco.

Most of our specimens from the Cordillera Colán were caught in mist-nets. We saw *Anairetes agraphia plengei* in life on only 4 occasions during 3 weeks of fieldwork. Our brief observations on its behaviour are similar to those reported in Parker & O'Neill (1980).

Anairetes agraphia closely resembles *A. agilis*, a monotypic species which occupies similar habitats from southwestern Venezuela to northern Ecuador (Traylor 1979). Morphological differences between these 2 taxa were reviewed by O'Neill & Parker (1976). Although 3 subspecies of *A. agraphia* are now recognized, the distinguishing characters of the species are consistent throughout its range. We feel that the relationship of these taxa are best expressed by maintaining each as a separate species, and by considering each to be an allospecies within the *Anairetes agilis* superspecies.

Acknowledgements: Philip J. Barbour, Linda J. Barkley, David R. Hunter, Manuel Sánchez, Klaus Wehr and Morris D. Williams participated in and helped to make the 1978 expedition to Cordillera Colán a success. We are most grateful to John S. McIlhenny, E. W. Mudge, H. Irving Schweppe, Laura R. Schweppe, and Babette M. Odom for their support of the fieldwork of the LSUMZ. Antonio Brack E., Marc Dourojeanni R., Susana Moller H., and Carlos Ponce P. of the Dirección General Forestal y de Fauna of the Ministerio de Agricultura, Lima, Peru continue their support of the LSUMZ field studies. We acknowledge the continued cooperation of Aero Peru. Gary R. Graves, John P. O'Neill, Theodore A. Parker, III, and J. V. Remsen, Jr., read and commented on the manuscript. We gratefully acknowledge a grant to Schulenberg in 1979 from the Frank M. Chapman Memorial Fund. Without the help of Gustavo del Solar R. of Chiclayo, Peru, our expedition would not have been the success it was.

References:

- Chapman, F. M. 1919. Descriptions of proposed new birds from Peru, Bolivia, Brazil, and Colombia. *Proc. Biol. Soc. Washington* 32: 253–268.
- O'Neill, J. P. & Parker, T. A. III. 1976. New subspecies of *Schizoeaca fuliginosa* and *Uromyias agraphia* from Peru. *Bull. Brit. Orn. Club* 96: 136–141.
- Parker, T. A. III & O'Neill, J. P. 1980. Notes on little known birds of the upper Urubamba Valley, southern Peru. *Auk* 97: 167–176.
- Traylor, M. A. Jr. 1977. A classification of the Tyrant Flycatchers (Tyrannidae). *Bull. Mus. Comp. Zool.* 148: 129–184.
- 1979. "Tyrannidae" in Traylor, M. A., Jr. (Ed.) *Checklist of Birds of the World*. Vol. VIII: 1–245. Cambridge, Mass.: Museum of Comparative Zoology.
- Weske, J. S. 1972. The distribution of the avifauna in the Apurimac Valley of Peru with respect to environmental gradients, habitat, and related species. Unpublished Ph.D. thesis, Norman, Oklahoma: Univ. Oklahoma.

Address: T. S. Schulenberg and G. L. Graham, Museum of Zoology, Louisiana State University, Baton Rouge, Louisiana 70893, USA.

A new subspecies of Lappet-faced Vulture *Torgos tracheliotus* from the Negev Desert, Israel

by Bertel Brunn, Heinrich Mendelssohn and John Bull

Received 20 May 1980

The difference in appearance between the Lappet-faced Vulture *Torgos* tracheliotus* of the relatively recently discovered Negev population and the African birds is so pronounced that we decided to investigate the taxonomic status of this new population.

The Lappet-faced Vulture was first described as *Vultur tracheliotus* by J. R. Forster (in Levaillant (1791): *Reise Innere Afrika*, Vol. 3: 363, pl. 12): type locality, Cape Colony, South Africa. In 1829 H. Smith (in Griffith's (1829) *Animal Kingdom* 6: 164) described the northern population from Nubia (Sudan) as *Vultur nubicus*. It was said to lack the ear-lappets so characteristic of the birds found further south. The border between the 2 populations (now *T. t. tracheliotus* and *T. t. nubicus*) is, for unclear reasons, usually given as being the Zambezi River (Friedmann 1930), but our investigation indicates that both the distinguishing features of, as well as the border between, the 2 previously described subspecies have been erroneously stated in the past.

Meinertzhagen (1930) pointed to the probable cause of the confusion. He states: "A narrow fold of skin, about a quarter of an inch wide and four inches long, runs from in front of the ear down the neck and forms a type of lappet – a feature which almost disappears in dried skins." Later, he comments: "If dried skins are examined, these lappets cannot be found as they shrivel up. But out of the many hundreds of birds seen alive in Egypt, not one could be said to be devoid of lappets." Hence the size of the lappets, as well as their actual colour, cannot be ascertained from examining skins, which will invariably lead to the conclusion that *T. t. nubicus*, the subspecies without lappets, is found throughout the species' range. The fading and shrinking of the wattles in dried specimens presumably is the reason why *nubicus* has not been recognized in most recent publications.

Examination of 49 skins at The American Museum of Natural History (AMNH), the National Museum of Natural History, the Field Museum, the British Museum (Natural History), the Tel Aviv University and the Giza Zoo indeed reveal that even remnants of lappets are very rare, even in South African birds. The colour of the head and neck in the specimens varies from pale orange to (most commonly) pale brownish, very different from the vivid colours of most live birds. There was, however, a difference, not invariable, in the colour of the thighs of the adult birds (which are best distinguished from immatures by the lack of down on the head). All immatures have brown thighs but in the adults of African origin the colour is found to vary. Of 26 adults skins from Ethiopia, Somalia, Kenya, Uganda, South Africa and Angola and 2 from the southernmost part of Sudan only 2 had brown thighs, all the others having cream or white thighs. A photograph of an adult bird from Rhodesia (P. F. Mundy) as well as 3 from Kenya (B. Bruun and H. Mendelssohn) show white thighs. In contrast 10 adult skins from Egypt

**Torgos* is considered by some to be a synonym of *Aegyptius*; e.g. Stresemann and Amadon in Mayr & Cottrell: *Checklist of Birds of the World* Vol. I (revised) 1979: 307–309; Amadon in *Condor* 79 (1977): 413–416.

and northern Sudan revealed only 2 with cream coloured thighs, the remainder having brown thighs. The overall plumage colour in this latter group, in contrast with the thighs, appeared somewhat paler.

Examination of 7 live birds from Kenya (6 in the Baltimore Zoo and one in the Giza Zoo) revealed large lappets, bright red head and white or cream thighs in all. A single live bird from Egypt in the Regent's Park Zoo, London, revealed a pink head, definite but somewhat smaller lappets and brown thighs. Measurements did not significantly differ in the 2 groups when either specimens or live birds were measured.

It thus appears that the two subspecies *T. t. tracheliotus* and *T. t. nubicus* can best be separated by the thigh colour of the adult (white to cream in nominate *tracheliotus*, brown in *nubicus*), size of lappets (very large in *tracheliotus*, somewhat smaller but quite distinct, in *nubicus*) and colour of head (bright red in *tracheliotus*, pink in *nubicus*).

If these distinguishing characteristics are used it is found that the border between the two subspecies lies in Sudan at about 15°N (if thigh colour alone is considered) or in Somalia and Ethiopia at about 8°N (if field descriptions are primarily relied upon), but certainly not at the Zambezi River almost 1500 miles further south as the vulture flies.

Fuertes' illustration of a Lappet-faced Vulture from Ethiopia (from either a live bird or a freshly killed specimen) clearly shows the enormous lappets and bright red colours of head and neck so characteristic of nominate *tracheliotus* (Fuertes 1930), while the Somalia birds (Archer & Godman 1937) appear to be of the nominate race as they have white or cream thighs and are said to have livid red heads and necks. However, the statement that they lack lappets below the ears is most puzzling and requires clarification.

In West Africa this is a scarce vulture (Bannerman 1930) and scant data exist. Pending further information, West African birds may be assigned to nominate *tracheliotus*.

Examination of the Negev birds shows significant differences from both of the African subspecies great enough to justify separation of this population as a distinct, new subspecies. This may be called:

***Torgos tracheliotus negevensis*, subsp. nov.**

Type: male AMNH # 824179; collected by Heinrich Mendelssohn in northern Negev, Israel, 10 August 1957 as immature: kept in captivity in Tel Aviv until its death 27 May 1979.

Diagnosis: Differs from all races of *T. tracheliotus* by having greyish-brown head with pink nape and only, even in live birds, the smallest vestige of lappets. A thick covering of down on the head persists in the adult of *negevensis* in contrast to the almost completely naked heads of adults of both *tracheliotus* and *nubicus*. The thighs of adults are dark brown or brown, never light brown (*nubicus*) or white (*tracheliotus*). The colour of the back and upper wings is paler brown than in *nubicus*, which in turn is not as dark as in *tracheliotus*. Immatures less than 1-2 years of age cannot with certainty be distinguished from the other 2 subspecies, but after that age the head and neck of both *tracheliotus* and *nubicus* are pink or red, whereas *negevensis* remains greyish brown. Immatures of all 3 subspecies have brown or dark brown thighs.

Measurements: Although *negevensis* to us appeared larger than the other 2 subspecies, measurements have failed to confirm this.

Range: The only known breeding population is found in the southern part of the Negev Desert in Israel.

Remarks: It will be evident that *nubicus* is to some extent intermediate between the southern nominate *tracheliotus* and the northern *negevensis*. The latter however is the most distinct of all populations of the species. In the field it is strikingly different from its African counterpart, closely resembling the Cinereous Vulture *Aegyptius monachus* and best distinguished by the one or two faint bands of light brown along the underwing coverts. The feet of the Lappet-faced Vulture are lead grey, but yellow in the Cinereous Vulture. From above, some contrast between the upperwing-coverts and the darker flight feathers is noticeable in the Lappet-faced Vulture. The Lappet-faced Vulture is best distinguished from the Griffon Vulture *Gyps fulvus* by its larger size, darker colour and flat silhouette when soaring (the Griffon Vulture soars with wings in a shallow V), and only slight, as opposed to very strong, contrast between the upper wing-coverts and the darker flight feathers. The redness present on the nape of the Negev birds during courtship or excitement is often not distinguishable in the field, and the head may look uniformly pale brown.

History: The first indication of a population existing in the Negev occurred in 1938 when Dr. Rodenko, a Russian medical doctor who practiced in Jaffa, shot an immature bird at Nebi Nussa near Jericho. The skin was brought to the taxidermist associated with H.M., who noted the lack of skin folds in this bird; but the first seen by H.M. in nature were during an expedition to the Negev in 1945 (an expedition that was without permission, H.M. finishing up in prison), when the Lappet-faced Vulture was common. H.M. was impressed by the large numbers of their huge nests, which were conspicuous features of the landscape of the Arava Valley. At that time, there were not many herds of goats, but there were many gazelles on which the Lappet-faced Vultures might have been feeding. In 1946 Hardy (1947) obtained a Lappet-faced Vulture that had been caught in a jackal trap near Nurnub, southeast of Beer Sheba. It was for a time housed in H.M.'s small zoo in Tel Aviv, and later sent to the London Zoo, where it was on display until its death in 1971. Since then our knowledge of the Lappet-faced Vultures in the Negev has greatly increased, but has unfortunately coincided with a marked decrease in the population. In 1975 only 6 nesting pairs were found, and in 1979 only 4, of which only 3 were able to produce young. Nests are conspicuous in trees in the wadis, and it is unlikely that recent counts have underestimated to any degree. The cause of this decline is not clear. Pellets found near the nests indicate that the main food is goat carcasses, yet despite a great increase in the goat population during the last 10 years, the Lappet-faced Vulture population has declined. Recently however, the Israeli government decided to urge the Bedouins to reduce their herds because the over-grazing was destroying the natural habitats and the southern Negev, where most of the Lappet-faced Vultures nest, is one of the areas in which herds of goats were almost completely eliminated. So, at the present time at least, the Lappet-faced Vultures have been deprived of their main food. The Israel Nature Reserves Authority supply some food, but only once a week, which is not enough to rear the nestling, though recently feeding has been intensified, aided by funds from the World Wildlife Fund. Young birds spend about 6 months with their parents, but then leave the area and disperse, apparently

scattering over a large area such as Arabia (Courtenay-Thompson 1972, Gallagher 1967, Warr 1978), in which they are not offered any kind of protection, and being so conspicuous have little chance of surviving to maturity. In the Negev only adult birds are seen, with their young of that year, but no immatures. Formerly, when the population was larger, immature birds occurred in the Jordan Valley as far north as Jericho and in the western Negev, where some (or perhaps many) died by feeding on thallium poisoned rodents (Mendelssohn 1975).

The Negev population of the Lappet-faced Vulture at present consists of probably less than a score of birds. The Tel Aviv University, under the directorship of H.M., has initiated a captive breeding programme on the basis of 4 birds, 3 of which are 4 years old and the fourth an adult which was found in 1978 with an injured wing. Such a captive breeding programme may be the only way of saving this subspecies from extinction.

Acknowledgements: We have received continuous and invaluable help from Dean Amadon. Others who have generously given us advice are David Ferguson, John Fitzpatrick, Michael D. Gallagher, S. Graham, Philippe Grandjean, Hassan Hafez, Harry Hoogstraal, Michael Jennings, Ben King, Lawrence Mason, James F. Monk, Peter F. Mundy, D. W. Snow, Frank Walker, F. E. Warr, George Watson and David Wood. Their help is greatly appreciated.

References:

- Archer, G. F. & Godman, A. J. 1937. *Birds of British Somaliland and the Gulf of Aden*. Vol. I. London.
- Courtenay-Thompson, F. C. W. 1972. Checklist Birds of the Kingdom of Saudi Arabia. *Saudi Arabia Nat. Hist. Soc.* J.6.
- Friedmann, H. 1930. Birds of Ethiopia and Kenya Colony. *Bull.* 153, U.S. Nat. Mus.
- Fuertes, L. A. 1930. *Album of Abyssinian Birds and Mammals*. Chicago.
- Gallagher, M. D. 1977. Birds of Jabal Akhdar. The Scientific Results of the Oman Flora and Fauna Survey 1975. *J. Oman Study. Spec. Rep.* 1: 27-58.
- Hardy, E. 1947. The Northern Lappet-faced Vulture in Palestine—a new record for Asia. *Auk* 65: 471-2.
- Meinertzhagen, R. 1930. *Nicholl's Birds of Egypt*. London.
- Mendelssohn, H. 1975. Report on the status of some bird species in Israel in 1974. *Bulletin of the International Council for Bird Preservations* XII: 265-270.
- Warr, F. E. 1978. Birds recorded in the Arabian Gulf States. Priv. printing.
- Addresses:* Dr. Bertel Bruun, 52 East 73rd Street, New York, N.Y. 10021, U.S.A.
 Dr. Heinrich Mendelssohn, Dept. of Zoology, Tel Aviv University, 155 Herzl Street, Tel Aviv, Israel.
 John Bull, Dept. of Ornithology, American Museum of Natural History, Central Park West at 79th Street, New York, New York 10024, U.S.A.

© British Ornithologists' Club 1981.

Nineteenth Century bird records from Tristan da Cunha by W. R. P. Bourne and A. C. F. David

Received 8 May 1980

At the beginning of the 19th century Tristan da Cunha was the most important breeding-place for seabirds in the temperate South Atlantic. It also had 3 highly-distinct landbirds: a flightless moorhen *Gallinula nesiotis*, a thrush *Nesocichla eremita*, and a bunting *Nesospiza acunbae*. By the end of the century the moorhen, the bunting, and breeding by 2 of the largest seabirds, the Wandering Albatross *Diomedea exulans* and a giant petrel *Macronectes* sp., had been recorded for the last time, while many of the other birds had become

hard to find. Beintema (1972) has reviewed the information about the moorhen, whose very existence had been doubted (Eber 1961), and Brooke (1979) some other old records. It may be useful to examine the old records again in the light of an unpublished account by John MacGillivray, who visited the island in H.M.S. *Herald* in November 1852 and appears to have left the best early report.

The history of the Tristan group and Gough Island to the south has been reviewed by Wace & Holdgate (1976). The islands appear to have been discovered by the Portuguese in 1505-6, and in the following century were explored by the Dutch, who found little use for them. They are first known to have been exploited by John Patton of the vessel *Industry*, probably from Philadelphia, who spent 9 months there in 1790 and obtained 5600 sealskins for the China market. They were visited again, briefly, by Lord Macartney's embassy to China on 31 December 1792; they found that there were still many seals, sea-lions (elephant seals?), penguins and albatrosses, and that the low ground was still covered in sedge and small shrubs. Unfortunately the weather compelled them to leave before they could walk round the island, which is a pity in view of the value of their observations at St Paul Island (Staunton 1797, Barrow 1806).

NINETEENTH CENTURY RECORDS

1813. In February-March 1813, before colonisation, Mr Lewis Fitzmaurice, Master of H.M.S. *Semiramis*, reported in his journal (at the Hydrographic Department) that there were "thousands of birds" in the vicinity, and "the number of birds which surrounded the ship were innumerable . . . we had a short interval of calm in which we caught a great number of Albatrosses with a hook and line some of them measuring from tip to tip of the wings 13 and 14 feet".

1816-17. The island was visited by a number of warships at the time of formal colonisation, including H.M.S. *Griffon*, H.M.S. *Julia* H.M.S. *Phaeton*, H.M.S. *Raccoon* and H.M.S. *Spey*. Between them their masters recorded in their journals that there were a great number of seals, sea lions and penguins, ample wood, celery and sorrel, but no venomous reptiles or vermin of any sort. Lt. D. Rice (1816) of H.M.S. *Falmouth* reported that "the earth being continually wet and in a sodden state and undermined by deep holes made by the birds that frequent the Mountains, vegetation is consequently backward . . . wild goats are not very plentiful as we have seen but one and that on the side of the Snowy Peak. Wild Hogs are numerous but the thick cover of the lower hills on the western side of the island makes it extremely difficult to take them as they confine themselves to the most difficult and impenetrable and unfrequented places". There are numerous references to shooting parties.

Captain Dugald Carmichael (1819) arrived with the garrison on 28 November 1816 to investigate the natural productions of the island, climbed the peak on the following 8 January and left on 30 March. He makes it clear that despite the presence of casual visitors and introduced animals for at least a quarter of a century there was still much vegetation on the low ground, and implies that most of the breeding birds were found where it was more open higher up the mountain, where petrel burrows penetrated the soil in all directions. The fate of his specimens is discussed by Stresemann (1953);

they were placed in the Bullock collection and sold at auction when it was dispersed in 1819. Most have now been lost, but some of the most important survive.

In addition to the 3 landbirds and more obvious seabirds, Carmichael reports the presence of 6 petrels, including a giant petrel *Macronectes* sp., the Broad-billed Prion *Pachyptila vittata*, "*Procellaria cinerea*" and 3 smaller species. It is usually assumed that "*P. cinerea*" was the Grey Petrel, which was given this name by Gmelin. Stresemann thought that the specimen had been lost; however, it was bought by Leach, who was associated with the British Museum, and was doubtless the Kerguelen Petrel *Pterodroma brevirostris*, at that time still undescribed, which still survives in the British Museum's Sub-department of Ornithology at Tring (Elliott 1957). The type of *Fregetta tropica melanoleuca* Salvadori from Tristan (via the Bullock Collection) at Turin (Bourne 1962) is doubtless one of his smaller petrels.

1824. The eccentric itinerant artist Augustus Earle (1832) was left behind by his ship the *Duke of Gloucester* on 26 March 1824 and rescued by the *Admiral Cockburn* on its way to Australia in November (Wace 1969). He does not appear to have been a very good naturalist, since he was the first to report 2 canards regularly retailed by subsequent authors, that the penguins lay 3 eggs and that the moorhen had a spur on its wing. Possibly they can be attributed to the "Governor", Corporal William Glass, described by Nolloth (1856) as a Scottish peasant from Kelso, who stayed behind when the garrison was evacuated in 1821 and led the community until he died in 1853. Earle describes and illustrates how Glass set about energetically "improving" the island with traditional Scottish techniques, constructing half a dozen sturdy stone houses, burning the natural vegetation, planting potatoes, rearing cattle, sheep, pigs, poultry and dogs, and slaughtering the wildlife. Cats had already run wild and wiped out feral chickens.

1829. H.M.S. *Jaseur* called on 18 January, and the Commander, M. Lyons, reported that "William Glen (sic) the Senior or oldest inhabitant . . . stated . . . that wild Hogs and Goats were very numerous, the former destructive to their cultivated ground".

1835. Stirling (1843) saw the gallinule on 12 October on the way to the Indian Ocean.

1842. We are indebted to Dr. Nigel Wace for notes and a partial copy of the records made by Oswald Brierly (1842, Milner & Brierly 1869), who visited Tristan 18–21 March on the yacht *Wanderer* on the way to Australia. He reported the presence of geese, ducks, Muscovy ducks, a thrush and a bird like the Green Linnet (Greenfinch *Carduelis chloris*), and that they left with pigs, sheep, monkeys (presumably from South America?), albatrosses and Island Cocks alive on the deck. They obtained 2 of the latter, described as having red legs (Earle said they were yellow) and a short wing with a spur; they were heard "chuckling" in the vegetation and were caught with dogs on moonlit nights.

Brooke (1979) quotes a comment by Layard (1867) on the number of albatrosses that he saw at Tristan at Christmas 21 years earlier. In the note on specimens collected by Nolloth (1856), discussed later, Layard reports "Corporal Glass mentioned to me in 1842 that the only bird that they had besides sea-fowl was a water-hen . . .", which indicates that Layard's visit also occurred in 1842, though he does not appear to have discovered much

else about the island. He states that he figured 2 caterpillars, which suggests that there may still be an account of his visit to be located somewhere.

1852. Popular attention was first directed to the moorhen by a brief note by Gurney (1853) reporting that a Mr. Strange of Sidney had met someone familiar with a "wingless" bird (then very fashionable) on Tristan. This could have been Earle, who lived in Sydney in the late 1820s, or Brierly, who remained in Australian waters until 1850. It seems more likely that it was John MacGillivray, who called at Tristan on the way to Australia in H.M.S. *Herald* on 11–12 November 1852 (Denham 1853). He collected the type of the native thrush (Gould 1855) but left the ship in Australia, so that his notes, summarised later, were never published.

1856. Captain M. S. Nolloth (1856) landed on 18 March 1856 to report on the state of the island for the Governor of Cape Colony, Sir George Grey. The low ground around the settlement had largely been cleared, and the rest of the underwood up to a sharp line at 400 ft had been affected over the last 7 years by a disease which caused small white spots. He reported that the Island Cock had green feet, and that large numbers of seabirds still came to roost on the high ground after dark, where the islanders took many eggs, especially from the albatross and black sea-eaglet. He notes that the last hogs had been shot within the previous decade and that goats were becoming scarce, and speculated that wild cats were taking the goats' kids. He saw numerous mice but was told no rats had yet been seen.

Nolloth's specimens were examined by E. L. Layard, who lists the Common Albatross *Diomedea exulans*, Mollymaw *D. melanophrys*, 2 species of petrel *Procellaria* and 2 of tern, and eggs of these, the penguin and "gallimele". One of his eggs labelled "*Diomedea melanophrys* Tristan da Cunha E.L.L. 676", bought at a London sale in 1907 and now at Aberdeen, measures 92.5 x 60 mm, which is too short for that species and agrees with the Yellow-nosed Albatross *Diomedea chlororhynchos*.

1861. The various accounts of the "gallimele" aroused the curiosity of Sir George Grey, and Buller (1888) reports the outcome. "In the course of time a deputation from the inhabitants came to Cape Colony to seek relief from the Governor on account of a general failure of the crops, and a young girl (a native of the island) remained behind as a servant at Government House. After several years she was seized by a yearning to revisit the island of her birth . . . Sir George told her that she might go, but that he would never take her back unless she brought with her some of the flightless rails, with which she professed to be quite familiar. A year afterwards the girl presented herself at Government House bringing with her a cage containing five of these birds. They were put at once into the aviary, and during the night two of them had their heads torn off by jackals in an adjoining compartment. The three survivors were forwarded to Dr. Sclater, who then characterised and named this hitherto unknown species".

According to Sclater (1861) all the birds were sent to England, though 2 more died on the way and arrived in spirit. An immature was described as the type and deposited in the British Museum, where it was eventually joined by the survivor when it died in the London Zoo. There is also a large but otherwise typical moorhen's egg which was obtained for Lady Grey by the Tristan clergyman, W. F. Taylor. These 3 specimens appear to be all that remains of this bird. Beintema (1972) could trace only one skin because the

others were then being moved from London to Tring. They will all be discussed elsewhere.

1867. In the remark book of H.M.S. *Galatea* at the Hydrographic Department it is reported that the Tristan indigenous tree was much reduced by cutting and disease, and that the wild goats which used to be seen in flocks of two or three hundred had not been found for 2-3 years.

1868. Lt. R. M. Sperling (1872) visited Tristan in H.M.S. *Racoon*, where he secured eggs of the Wandering Albatross and giant petrel and was informed that the feral cats were preying upon the moorhen. According to Layard (1868) Sperling also obtained a singularly marked white egg attributed to a "black petrel", which seems likely to have belonged to the Brown Noddy *Anous stolidus*, described to MacGillivray as a "grey petrel".

1869. Layard (1869 a,b) reports that Captain G. T. Een of the schooner *Telegraph* brought back a consignment of live gallinules, 3 specimens of the "island thrush" in alcohol and its eggs, a finch (*Hyphantornis*?) and a "lot of eggs of sea-fowl" from "the islands around Tristan da Cunha". Some more gallinules were sent to the London Zoo, and Beintema (1972) has identified 3 sterna at Cambridge and a skin that reached New York in the Rothschild Collection as those of the Gough Moorhen *Gallinula comeri*, the first known specimens. Brooke (1979) has confirmed that the *Telegraph* left Gough Island on 31 May, and the specimens from there may have included also the first examples of the Gough Bunting *Rowettia goughensis*. The vessel could also have visited the Tristan group, however, in which case the "finch" could have been the Tristan Bunting *Nesospiza acunbae*, which was not in fact described until 1873 from a specimen collected by Carmichael (Stresemann 1953), and possibly also an example of the extinct population from the main island of Tristan. Although Layard sent a collection of eggs to the British Museum in that year (Walters 1979), unfortunately none of the above specimens can be traced there (C. J. O. Harrison and M. J. Walters *in litt.*).

1873. The naturalists on H.M.S. *Challenger* spent most of their time in the Tristan group exploring the outlying islands, and only visited the main island on 15 October 1873, where they collected some conflicting information. They were informed that the bunting was extinct (Suhm 1876, Campbell 1877), that the gallinule was now rare and only found high in the hills (Suhm 1876), but that the Wandering Albatross and giant petrel still bred (Moseley 1879). Suhm (1876) and Wyville Thomson (1878) reported that rats were present, but Moseley (1879) specifically states that they were not, though he also thought that there had formerly been rabbits (as well as pigs and goats), which also seems rather doubtful. Campbell (1877) finally discovered that the penguins only lay 2 eggs; he was informed that they appear about 12 August and lay about a fortnight later; the eggs were starting to hatch at the time of his visit.

At this point there ensues a gap in the ornithological records of a generation, during which the islanders fell on hard times, since, with the advent of steam, ships ceased to pass by and call for fresh food on the way to Australia, while seals and whales had become scarce. They therefore had to fall back on their own resources. Traditionally their visits to the outer islands to obtain birds started about 1870 (Wace & Holdgate 1976), when they were also reported by the naturalists of the *Challenger* to be exterminating the feral

animals that had been allowed to multiply on Inaccessible Island. This suggests that by then the number of birds was beginning to decline markedly on the main island. By the time that the record was resumed in the early years of this century by Mrs. Barrow (1910) some species were extinct there and the others were becoming hard to obtain.

The damage has been attributed to rats, generally considered to have arrived with a shipwreck in 1882 (Brander 1940). It seems clear from the accounts summarised above that the decline must have started much earlier, and was probably cumulative over many decades. The impact of the hogs may have been serious on the low ground before the island was colonised. Earle (1832) found cats running wild by the 1820s, and by the 1850s the excellent observer Nolloth (1856) considered that cats were a threat even to young livestock, while later, Sperling (1872) was informed that they were responsible for the decline of the gallinule. The vegetation even appears to have declined, affected by a fungus in the 1850s (Nolloth 1856). There cannot have been much left for the rats.

OBSERVATIONS BY JOHN MACGILLIVRAY

John MacGillivray was the son of the greatest British ornithologist of his day, William MacGillivray, the friend of J. J. Audubon, and their children were brought up together (MacGillivray 1910). He was born in 1821, made important pioneer observations in the Outer Hebrides when he was only 19, and subsequently abandoned medical studies at Edinburgh to become naturalist successively on H.M.S. *Fly* (1842-6), H.M.S. *Rattlesnake* (1846-50) and H.M.S. *Herald* (1852-5) during the exploration of the southwest Pacific. He was an excellent field observer and collector who kept good notes but failed to write them up. He eventually fell out with the Navy and was discharged at Sydney, where he had his family, in 1855, but continued to collect in the area until his death in 1867 (Whittell 1954, Calaby 1974).

MacGillivray spent 8 hours on Tristan da Cunha on 12 November 1852, during which time he walked through the settlement to the Hillpiece and back to the shore with Peter Green, a Dutch sailor who had been there 16 years, who told him what was known about the natural history of the island. He made 16 pages of closely-written notes in his journal (MacGillivray 1852-5), and prepared a summary for Sir Francis Beaufort preserved in the records of the Hydrographic Department.

While this appears to be the best account of the birds of the island before the Norwegian expedition of 1937-8 (Hagen 1952), this statement merely demonstrates the difficulties facing an ornithological historian. MacGillivray states that in common with many later observers he often had difficulty identifying the garbled composite descriptions of the birds he was given, and he sometimes jumped to unjustified conclusions about their identity. Much of the information is no longer new, so it has been summarised with interpretive comments and references to other information in parentheses.

(Rockhopper) Penguin *Eudyptes chrysocome*. Lays 2 eggs, sometimes 3, starting about 28 August at one colony and 8-9 September at another. (Elliott (1957) also discusses variations in laying date.)

Goney (Wandering Albatross) *Diomedea exulans*. Tristan was still "a great breeding place" with nests scattered all over the summit. Eggs laid at Christmas gave rise to chicks which fledged in November (a trifle optimistic?) if the eggs were not taken by the boys, one of whom had died of exposure. The

old birds changed over at the nest, and ate large squid. (They were extinct by the end of the century.)

Molly or Mollymawk (Yellow-nosed Albatross) *Diomedea chlororhynchos*. This appeared to be the most abundant bird at the time of his visit (when it would have been incubating). Numbers were feeding over the kelp offshore, and following porpoises at 35°58'S, 06°34'E on 20 November.

Peeoo (Sooty Albatross *Phoebastria fusca*). First reported at 36°29'S, 31°50'W on 1 November, but the information given for the island appears more applicable to the next species and is given there. (Mrs. Rowan remarks that his route would not have taken him near the breeding-places.)

Nelly or Stinker (Giant Petrel *Macronectes* sp.). There was only one small "rookery", where it made "a small nest of decayed grass among the tussocks immediately behind the beach" and laid one long white egg, larger than that of the Molly, in August. (The laying date of this extinct population therefore agrees with that of the Northern Giant Petrel *Macronectes halli*, though Gough birds have green tips to the bill like the southern species *M. giganteus* (Bourne & Warham 1966, Johnstone *et al.* 1976).)

Eglet or Black Eglet *Procellaria atlantica* Gould (=Great-winged Petrel *Pterodroma macroptera*). This was considered locally to be the most plentiful bird on the island. They arrived in July to dig long, winding burrows and then "cleared out" for a month before laying (apparently the first description of the pre-laying exodus of petrels). The birds were located with dogs and extracted from their holes with long, hooked sticks. (The description may also apply to the Atlantic Petrel *Pterodroma incerta*, which is more numerous on the low ground and nests a little later, but otherwise behaves similarly, on Gough Island. The reason for the name "eaglet", now modified to "haglet", will be obvious to anyone who has handled the birds.)

Mud-bird. "This was never seen except on top of the mountain, where it breeds amongst ice and snow. I conjecture it to be *Procellaria mollis* Gould, as it is said to be half grey, half white, and the size of a pigeon." (The species which characteristically nests high in waterlogged holes on Gough Island is the Kerguelen Petrel *Pterodroma brevirostris*, collected on Tristan by Carmichael.)

Whale-bird. Most abundant. (This name was used by sailors for prions, now included among the "night-birds" on Tristan. It was probably the Broad-billed Prion *Pachyptila vittata*, but there may have been some room for confusion.)

Night-bird. Reported to be smaller than the whale-bird, prone to come to fires at night, and to lay in December. (This name is often applied to nocturnal petrels indiscriminately elsewhere. "Nighthawk" is now most often used for the smaller gadfly petrels, but sometimes also for the Little Shearwater *Puffinus assimilis*. The species which lays in December and occurs over the low ground inland at night on Gough Island is the Soft-plumaged Petrel *Pterodroma mollis*.)

(White-chinned Petrel) *Procellaria (aequinotialis) conspicillata*. One collected at 36°01'S, 05°20'W on 15 November, and many following porpoises with albatrosses on 20 December. (Possibly this implies that the distinctive local race was more numerous then?)

(Grey Petrel *Procellaria cinerea* and Great Shearwater *Puffinus gravis*?). Myriads of "*Puffinus cinereus*" were seen by MacGillivray (1852) from 28°W

to 1½°E when passing Tristan in the *Rattlesnake* in January 1847. During the voyage of the *Herald* he saw "*Procellaria basitata*" (then sometimes used for the Grey Petrel) from 36°29'S, 31°50'W on 1 November. On 15 November he found "*Puffinus cinereus*" sitting on the water in flocks and collected several as well as the White-chinned Petrel discussed earlier. (Grey Petrels breed in the winter and appear to disperse south in summer, so most of these birds were probably Great Shearwaters. He narrowly missed anticipating the discovery of its breeding-place by over half a century, but the Tristanians do not appear to have been aware of the great colony on Nightingale Island at that time either.)

(Little Shearwater *Puffinus assimilis*.) A small shearwater with the distinctive flight of this species was first seen with the large shearwaters on 1 November and again at sea off Tristan, where he speculated whether it was the night bird already discussed.

"*Thalassidroma fregetta*". A specimen was recognised and it was said to be abundant and to come to fires at night. (This name was used for the White-faced Storm-petrel *Pelagodroma marina* as well as storm-petrels of the genus *Fregetta* at that date; either might be expected and confused with the other. He later identified his specimen as *F. tropica*.)

(Common Diving-Petrel) *Pelecanoides (urinatrix)*. Seen off the landing-place.

Sea-hen (Great Skua *Catharacta skua*). Ubiquitous; a pair followed 2 chicks out to the vessel.

King-bird (Antarctic Tern *Sterna vittata*). Breeds in holes in the rocks in December.

Woodpigeon (Brown Noddy *Anous stolidus*). Described as a "grey petrel" and identified as "*Procellaria glacialis*" (subsequently encountered as a vagrant by the naturalists of the Challenger), though a flock of dark terns was noticed from the boat.

Woodhen, Woodcock, or Island Cock (*Gallinula nesiotis*). Reported to have become scarce on the cleared land, but still common elsewhere and heard clucking in the vegetation on the Hillpiece. It was said to be black all over with white patches under the wings and tail, which was kept cocked, and a red shield at the base of the bill. It was caught with dogs. (It seems possible that the variation reported in the amount of white on the flanks and in the colour of the legs, said to be green, yellow, or red, may be due to age?)

Thrush (*Nesocichla eremita*). Very tame, and sometimes caught with a string attached to a stick, and kept in captivity. The nest was made of grass and constructed half way up a tree in the branches. It laid 4-5 speckled eggs. The stomach of the type contained earthworms and millipedes but no insects.

Greenbird (Tristan Bunting *Nesospiza acunhae*). An uncommon small green bird the size of a sparrow, but probably a finch.

Acknowledgements: We are particularly indebted to Sir Hugh Elliott, Mrs. M. K. Rowan and Dr. Nigel Wace for assistance with historical material and comments on a draft in the light of their local knowledge. Also Mr. R. K. Brooke, Dr. Martin Holdgate, Dr. M. E. Richardson and Mr. Michael Walters for various additional assistance.

References:

Barrow, J. 1806. *Voyage to Cochinchina in the years 1792 and 1793*. London.

Barrow, K. M. 1910. *Three years in Tristan da Cunha*. London.

Beintema, A. J. 1972. The history of the island hen (*Gallinula nesiotis*) the extinct flightless gallinule of Tristan da Cunha. *Bull. Brit. Orn. Cl.* 92: 106-115.

- Bourne, W. R. P. 1962. Accounts of *Fregetta* storm-petrels. In Palmer, R. S. (ed.), *Handbook of North American Birds*. Vol. 1: 252. New Haven.
- Bourne, W. R. P. & Warham, J. 1966. Geographical variation in the giant petrels of the genus *Macronectes*. *Ardea* 54: 45-67.
- Brander, J. 1940. *Tristan da Cunha 1506-1902*. George Allen and Unwin: London.
- Brierly, O. 1842. *Diary kept on board R.Y.S. Wanderer (Capt. Bushby, R.N.) voyaging from Plymouth to Australia*. Ms ML A 528, Mitchell Library, Sydney, Australia.
- Brooke, R. K. 1979. Some mid-XIX century bird collections from Tristan da Cunha. *Cormorant* 7: 24-26.
- Buller, W. L. 1888. *A History of the Birds of New Zealand*. 2nd edition. Vol. 2: 104. London.
- Calaby, J. 1974. Article on John MacGillivray. In Pike, D. (ed.), *Australian Dictionary of Biography* 5: 155. Melbourne.
- Campbell, G. 1877. *Log-letters from the Challenger*. Macmillan: London.
- Carmichael, D. 1819. Some account of the island of Tristan da Cunha and its natural productions. *Trans. Linn. Soc. Lond.* 12: 483-513.
- Denham, H. M. 1853. A day on Tristan d'Acunha. *Nautical Mag.* 22: 183-189.
- Earle, A. 1832. *Narrative of a nine months' residence in New Zealand in 1827, together with a journal of a residence on Tristan d'Acunha*. London. (Reprint edited by E. H. McCormick, Oxford University Press, 1966.)
- Eber, G. 1961. Vergleichende untersuchungen aum flugfalngen Teichuhn *Gallinula chloropus* und an der flugfahigen Inselralle *Gallinula nesiotis*. *Bonn. Zool. Beitr.* 12: 247-315.
- Elliott, H. F. I. 1957. A contribution to the ornithology of the Tristan da Cunha group. *Ibis* 99: 545-586.
- Gould, J. 1855. On some new species of birds collected by Mr. McGillivray. *Proc. Zool. Soc. London* 1855: 165.
- Gurney, J. H. 1853. On a wingless bird of Tristan da Cunha. *Zoologist* 1853: 4017.
- Hagen, Y. 1952. The birds of Tristan da Cunha. *Res. Norwegian Sci. Exped. Tristan da Cunha* 1937-38, 20.
- Johnstone, G. W., Shaughnessy, P. D. & Conroy, J. W. H. 1976. Giant Petrels in the South Atlantic: New data for Gough Island. *S. Afr. J. Antarct. Res.* 6: 19-22.
- Layard, E. L. 1867. *The Birds of South Africa*. Cape Town.
- 1868. The South African Museum. *S. Afr. Mag.* 2(2): 702-704.
- 1869a. The South African Museum. *S. Afr. Mag.* 2(3): 467-468.
- 1869b. Further notes on South African ornithology. *Ibis* 2(5): 361-378.
- MacGillivray, J. 1852. *Voyage of the Rattlesnake*. London.
- 1852-5. *Journal of Observations aboard H.M.S. Herald*. Ms ADM7-851 and 852, Public Record Office, London.
- MacGillivray, W. 1910. *The Life of William MacGillivray*. London.
- Milner, J. & Brierly, O. 1869. *The Cruise of the Galatea*. London.
- Moseley, H. N. 1879. *Notes by a Naturalist on the Challenger*. London.
- Nolloth, M. S. 1856. Visit of H.M.S. *Frolic* to Tristan da Cunha. *Nautical Mag.* 25: 401-415.
- Rice, D. 1816. *Journal*. Hydrographic Department Misc. Papers Vol. 87 (Ca4).
- Slater, P. L. 1861. On the Island Hen of Tristan da Cunha. *Proc. Zool. Soc. London* 1861: 260-263.
- Sperling, R. M. 1872. (Letter). *Ibis* 1872: 74-79.
- Staunton, G. L. 1797. *An authentic account of an embassy from the King of Great Britain to the Emperor of China*. 3 Vols. London.
- Stirling, W. 1843. *Narrative of the wreck of the ship Tiger*. Exeter.
- Stresemann, E. 1953. Birds collected by Captain Dugald Carmichael on Tristan da Cunha 1816-1817. *Ibis* 95: 146-147.

- Suhm, R. von Willemoes. 1876. Preliminary report . . . on observations made during the earlier part of the voyage of H.M.S. *Challenger*. *Proc. Roy. Soc. London* 24: 583-585.
- Wace, N. M. 1969. The discovery, exploitation and settlement of the Tristan da Cunha Islands. *Proc. Roy. Geog. Soc. Austr., S. Austr. Branch* 70: 11-40.
- Wace, N. M. & Holdgate, M. W. 1976. Man and nature in the Tristan da Cunha Islands. *I.U.C.N. Monograph* 6.
- Walters, M. 1979. Eggs from the collection of E. L. Layard. *Bull. Brit. Orn. Cl.* 99: 40.
- Whittell, H. M. 1954. *The Literature of Australian birds*. Perth.
- Wyville Thomson, C. 1878. Voyage of the Challenger. *The Atlantic*. London.
- Addresses:* W. R. P. Bourne, Zoology Department, Aberdeen University, Tillydrone Avenue, Aberdeen, Scotland.
Lt. Cdr. A. C. F. David, R.N., Hydrographic Department, Taunton, Somerset TA1 2DN, England.

© British Ornithologists' Club 1981.

Distribution and biology of the White-cheeked Cotinga *Zaratornis stresemanni*, a high Andean frugivore

by Theodore A. Parker, III

Received 30 May 1980

Though the avifauna of the massive Cordillera Occidental of the Peruvian Andes is now relatively well known, few of its endemic species have been studied in detail. Especially interesting from a biogeographical and ecological standpoint are those birds that inhabit the relict Temperate Zone woodlands that occur on the western slopes of the range between latitudes 8°S and 14°S, in an elevational range of 2500 m to 4500 m. One of the most exciting discoveries made by Maria and Hans-Wilhelm Koepcke during their explorations of these woodland patches was the previously undescribed White-cheeked Cotinga *Zaratornis stresemanni*. This thrush-sized bird was found, surprisingly, less than 70 air km east of Lima in the *Oreopanax* association forest of Zárate, above the Rimac River valley at 2700 m. The species was described from 2 female specimens collected in October 1953 (Koepcke 1954). When news of the discovery reached American ornithologists in 1954, another specimen, a female collected by M. A. Carriker above Yánc in northern Ancash in March 1932, was discovered in the collection of the Philadelphia Academy of Sciences, where overlooked for more than 20 years (Bond 1955).

Males of this cotinga were not known until found in 1966 in an isolated *Polylepis* woodland in the upper Santa Eulalia Valley, the next valley north of the Rimac, at more than 4000 m (Lüthi 1970). When I visited Yánc in 1976, the sexes had never been found together, and there was speculation that long distance migrations (e.g. across the Rimac Valley) must join them for the reproductive period (Lüthi 1970). Furthermore, the apparent separation of males and females into 2 distinct habitats, with the former occurring in higher *Polylepis* and the latter in *Oreopanax*, led the Koepckes to conclude that if either habitat were destroyed by man the species might become extinct. This seemed corroborated by the fact that *Zaratornis* could not be found by them above Yánc where the *Oreopanax* groves just above

the village had been greatly reduced by local people. I now believe that this interesting bird is more or less resident in one habitat, *Polylepis* woodland, and that post-breeding dispersal accounts for individuals or groups of individuals that occur in other (lower) areas, like the forest of Zárate.

Because of the enigmatic nature of this species, and because of the paucity of information of Andean cotingas in general, I became interested in *Zaratornis* and from 1974 to 1978, while working for the Louisiana State University Museum of Zoology (LSUMZ), I was able to observe this bird in 3 localities. Because of the lack of information on *Polylepis* woodlands, I include a list of conspicuous plant genera represented in them, and some of the other characteristic bird species found in them. Morphological data from specimens of *Z. stresemanni* in the LSUMZ are presented in Table 1.

TABLE I

Mensural data from specimens of *Zaratornis stresemanni* in the LSUMZ.

	sex	wing(chord) mm	tail mm	tarsus mm	weight g	locality
63561	♂	111	85	25.7	52.5	Santa Eulalia
78601	♂	115	86	26.5	46	Santa Eulalia
78602	♂	114	87	25.5	—	Santa Eulalia
82016	♂	114	84	26.0	56.5	Tútupac (Yánc)
34665	♀	111	87	26.5	47	Zárate
34666	♀	112	86	26.8	52	Zárate
34667	♀	114	87	26.8	55	Zárate
82015	♀	113	90	—	54	Tútupac

Typical soft part colours are as follows: iris red; bill light bluish-grey; tarsi and feet dark brown.

DISTRIBUTION

Since the discovery of *Zaratornis* at Zárate in 1953, this bird has been found in 7 localities, 6 on the western slopes of the Western Andes, and one on the western flank of the Eastern Andes in the upper Marañón River drainage. From north to south the localities and the elevations at which *Zaratornis* was found are as follows:

Tayabamba (3250 m), Departamento de La Libertad (sight record by LSUMZ personnel, M. Robbins, pers. comm.); above Yánc (Bond 1955) and Quebrada Tútupac (3650–4250 m), c. 25 km by trail south of Yánc, Dpto. Ancash (pers. obs.); Quebrada Llanganuco (c. 3400–4300 m), east of Yungay, Dpto. Ancash (sight records by E. Mackrill and J. Rowlett, pers. comm.); Quebrada Quicar (c. 3700 m), east of Chancay, Dpto. Lima (sight record by T. Mischler, pers. comm.); c. 13 km W. Milloc (3600–4200 m) in the upper Santa Eulalia Valley, Dpto. Lima (Lüthi 1970, and pers. obs.); and Pampa Galeras (3650 m), c. 50 km east of Nazca, Dpto. Ayacucho (Brokaw 1976, and pers. obs.). The known elevational range of the species is 2700 to 4240 m. I predict that the bird will eventually be found to inhabit the *Polylepis* zone of western Dpto. La Libertad, and it may in fact range south to northern Dpto. Arequipa.

My observations were made in 3 of the above localities: Quebrada Tútupac, the upper Santa Eulalia Valley, and Pampa Galeras.

HABITAT

The habitat of *Zaratornis* is *Polylepis* spp. (Rosaceae) woodland surrounded by shrubbery and grassland. At the northern end of the distributional range

of the species these isolated tracts grow on steep, rocky slopes of deep quebradas, often glacial valleys, separated from one another by high puna grasslands and rugged snow-covered mountains. Most of the habitat there is remote and difficult to reach. In the south *Polylepis* is more accessible. The woodlands at Pampa Galeras occur on moderate slopes that rise above great expanses of level grasslands. At Zárate this bird has been found in a relict Temperate Zone forest of a variety of tree species (see Ferreyra 1978).

On the study sites *Zaratornis* was noted mainly in small groves less than one hectare in size, separated from each other by grassy and shrub-dotted areas or rockslides. Average tree height on the 3 sites was as follows: Tútapac – 5 m, Santa Eulalia – 5 m, Pampa Galeras – 3.5 m. The largest trees in the first 2 localities had diameters at breast height (DBH) of up to 80 cm. Other prominent plant growth noted were woody shrubs of the following Compositae: *Gynoxys* spp. (very common at Tútapac), *Vernonia* sp. (at the lower edge of the Santa Eulalia woods), *Chuquiraga* sp. (Santa Eulalia and Pampa Galeras), *Senecio* spp. and *Baccharis* spp. (all localities). *Lupinus* spp. (Leguminosae) were also prominent in all localities, and a *Berberis* sp. (Berberidaceae) was noted at the Santa Eulalia site and at Pampa Galeras. All these shrubs grow mainly along the edges of the woodlands. The ground below the trees is covered with grasses and other herbaceous growth.

Of greatest importance to the cotinga is the presence in the *Polylepis* of two conspicuous, orange-flowered mistletoes of the Loranthaceae, *Tristerix chodatianus* at Tútapac and Santa Eulalia, and (probably) *Ligaria cuneifolia* at Pampa Galeras. The former was the only fruit-producing plant observed at Tútapac, and certainly the most important one found in the upper Santa Eulalia Valley. At Pampa Galeras *Ligaria* was the only observed food source for *Zaratornis*. Koepcke (1958) mentioned *Phrygilanthus peruviana* (= *Tristerix secundus*) as an important food item for the cotingas *Zaratornis* and *Ampelion rubrocristata*. Clumps of these 3 mistletoes grow at or near the ends of *Polylepis* branches at all heights in the trees.

Characteristic bird species that inhabit *Polylepis* woodlands (and spend most of their time in or under the trees) at Tútapac (1), in the upper Santa Eulalia Valley (2), and Pampa Galeras (3) include:—

Aglaeactis cupripennis (1, 2), *Metallura phoebe* (all) (this and the last hummingbird species are important pollinators of the mistletoe flowers), *Leptasthenura yanacensis* (1), *L. pileata* (all), *Craniococcyx antisiensis* (1, 2), *Grallaria andicola* (1, 2), *Scytalopus magellanicus* (1), *Ochthoeca oenanthoides* (all), *O. rufipectoralis* (1), *O. leucophrys* (2, 3), *Oreomanes fraseri* (all), *Xenodacnis parina* (1, 2), *Atlapetes rufigenis* (1), *A. nationi* (2), *Carduelis atrata* (all), *C. uropygialis* (2), and *C. crassirostris* (all). Conspicuous mammals observed in association with *Polylepis* at Tútapac were White-tailed Deer *Odocoileus virginianus*, Taruca or Peruvian Huemul *Hippocamelus antisensis*, and Mountain Viscacha *Lagidium peruanum*.

Climatologically *Polylepis* woodlands are part of the arid Puna Zone environment. Rains fall mainly from January to March, often in the form of snow or ice. Tovar (1973) provides the following data for Pampa Galeras:—annual rainfall there during 1966–1969 averaged 822 mm, of which 663 mm fell during the above 3-month period; only 13 mm were recorded from May to September, while October to December received a range of 23.4 to 49.3 mm; warmest average daily temperatures were noted during the wet months (January to March = 6.3°C), while the coolest period was June to August (3°C); average daily highs ranged from 10.9°C (March) to 13.6°C (September to November); lows were 6.7°C (July) to 1.5°C (January);

throughout most of the year days are warm and sunny, and nights are clear and cold. Unfortunately, weather data for localities at the northern end of the range of *Zaratornis* are not available.

Zaratornis – MISTLETOE INTERDEPENDENCE

One of the most interesting aspects of *Zaratornis* ecology is its apparent mutualism (or perhaps symbiosis) with the mistletoes *Tristerix* and *Ligaria*. At Tútapac and in the Santa Eulalia Valley this cotinga was seen to feed solely on the fruits of *Tristerix chodatianus*. The elevational and geographic distribution (Ancash to Ica) of this little-known plant (J. Kuijt, in litt.) coincides closely with that of *Zaratornis*. At Pampa Galeras the cotinga appeared to be dependent on another mistletoe, probably *Ligaria cuneifolia* (see Tovar 1973). In all 3 localities, the seeds of these plants were being dispersed, through regurgitation, onto *Polylepis* branches.

During foraging bouts, the cotinga perched on mistletoe clumps and swallowed up to 5 berries in succession. Within a few minutes individuals flew to another perch site, either an exposed calling perch or a sheltered limb within the foliage of a tree. There, after 5–10 minutes more, the sticky seeds were regurgitated, one by one, and wiped onto the surface of the limb. I never saw a seed fall to the ground during this process and assume that a very high proportion of all fruits taken are successfully dispersed in this manner. The exposed dead branches of calling perches were thickly covered with regurgitated seeds, and examination of less frequently used perch sites of living branches and limbs also revealed seeds, a few in various stages of germination. The seeds, quite large for mistletoes (A. Gentry, pers. comm.), are apparently always regurgitated.

Zaratornis was the only frugivorous bird observed on all study sites, and is probably the sole dispersal agent for mistletoes growing above 3000 m. It appears that both species of mistletoes produce fruit throughout the year, though fruit seemed to be less abundant during the dry months August–October. This might account for the post-breeding dispersal of part of the *Zaratornis* population and subsequent appearance of the species in wooded areas at lower elevations (e.g. Zárate).

Obligate interdependence of birds and mistletoes has been reported previously for the avian genera *Euphonia* and *Dicaeum* (Kuijt 1969: 45–46). Interestingly, at least some species in these genera have specialized digestive tracts for handling large numbers of small mistletoe seeds. The *Zaratornis* – mistletoe interdependence represents a different type of co-adaptive system, whereby relatively small numbers of large fruits are taken, and a high proportion of their seeds are dispersed to a possible germination site. It is tempting to speculate on the degree to which this bird and its food plants may have co-evolved. Detailed studies of the biology of both these organisms are needed before such a process can be understood.

GENERAL BEHAVIOUR

Almost nothing has been written about the behaviour of *Zaratornis* or its 2 close relatives *Ampelion rubrocristata* and *A. rufaxilla*. Farrand (in Snow 1973) wrote: "In its [*Zaratornis*] general behaviour it is very like *Ampelion rubrocristata*. In a manner very reminiscent of that species it often pops up suddenly onto a dead snag and sits upright, looking about rather nervously.

The flight of *Zaratornis* is very similar to that of *Ampelion* and both species approach a perch flying low and making a final upward sweep, rather like that of a kestrel or shrike." As noted by Koepcke (1958), individuals characteristically perch quietly, often for long periods, atop a tree on a favourite exposed branch. This is apparently a part of nesting or feeding territory surveillance, though *Ampelion rubrocristata* occasionally hawks insects from the air about such perches (pers. obs.). Though I have never seen *Zaratornis* take an insect in any manner, I would expect them to do so from time to time.

At seemingly long but regular intervals, loud songs or calls are uttered from the calling perches (see below). When disturbed, a bird perched in the open usually bobbed its head and flicked its wings and tail in a nervous manner. Birds on territory (see under nesting behaviour) often pursued conspecifics that had entered the defended area. Territories of mated pairs at Tútupac were small, averaging (very) approximately 100 m x 60 m (n=6).

Twice I observed a display between members of a mated pair. In both instances this occurred after both birds had been foraging. One individual (the sexes are monomorphic) flew from a mistletoe clump to a conspicuous calling perch where it was soon joined by the second bird. Both faced each other, and, while less than a foot apart, bowed towards each other slightly, and began head bobbing and wing flicking. After 30–60 seconds, these displaying birds regurgitated *Tristerix* seeds onto the exposed surface of the *Polylepis* branch. During this type of display no sounds were uttered. Similar posturing and behaviour were exhibited by members of feeding aggregations (4–10 individuals) noted in August and September in the Santa Eulalia Valley.

VOCALIZATIONS

Like other cotingas, *Zaratornis* has a rather limited, unmusical repertoire. The primary song of the species, which under normal conditions is repeated 3–6 times at intervals of 30 to 60 seconds, is a loud, low-pitched series that may be written as: "reh-reh-reh-reh-rrrrrrrrrr-ré-ré." It averages c. 4 seconds in length, and falls within a frequency range of 2–4 kHz (see Plate 1). This vocalization speeds to a roll towards the middle and ends with 2–3 emphatic notes; it is nasal in quality and sounds rather froglike at a distance. It is given by both members of territorial pairs, usually from the tip of an exposed calling perch, and also by members of feeding aggregations during the non-breeding season. Calling normally begins in the morning (8.00–9.00) when sunlight first illuminates a woodland. One calling bird is usually answered by several others in adjacent groves. Calling is most frequent during early morning and late afternoon.

A regularly heard disturbance call uttered by incubating birds upon being flushed from a nest, and also by adults engaged in intra-specific territorial encounters, is a drawn-out "raaaaaah". Contact notes between members of pairs or feeding aggregations are short but similar in quality to other vocalizations ("reh" "reh" "reh" etc.). While calling, birds remain upright and almost motionless.

Tape-recordings of this species are on deposit at the Cornell University Library of Natural Sounds.

NESTING BEHAVIOUR

Prior to 1976, *Zaratornis* had not been found breeding. The female specimen

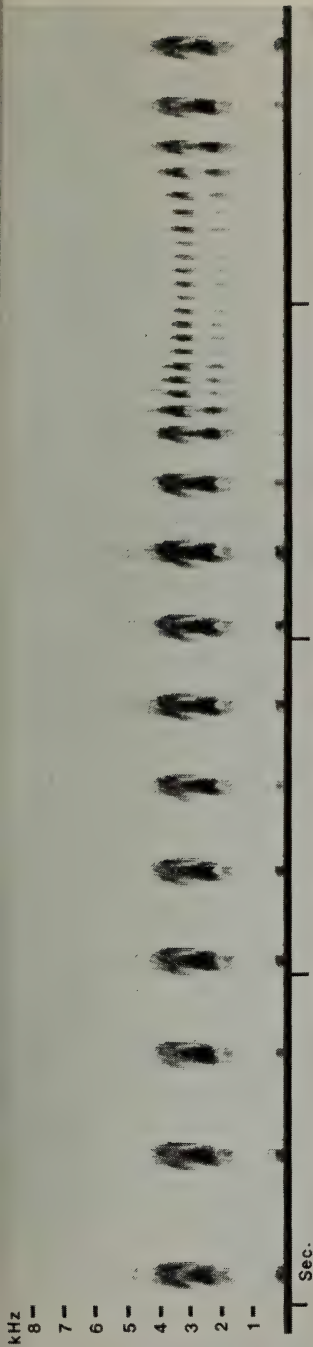


Plate 1a. Primary song of *Zaratornis stresemanni*.



Plate 1b. Nest and eggs of *Zaratornis stresemanni*. (Photo by M. D. Williams.)
See T. A. Parker III.

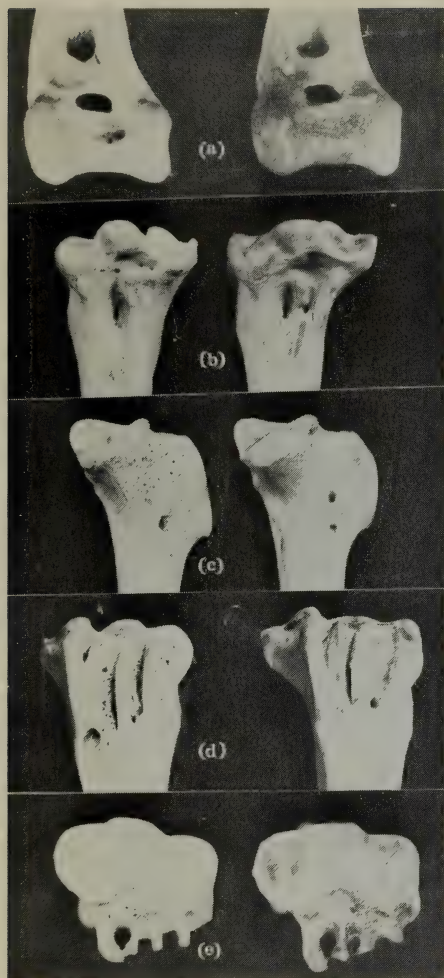


Plate 2A (left). The right tarsal joint and hypotarsus in Whooper Swans *Cygnus cygnus cygnus* (left) and Mute Swans *C. olor* (right). (a) Anterior view of tibiotarsal condyles. (b) Anterior view of tarsometatarsal head. (c) Internal hypotarsal ridge. (d) Posterior view of hypotarsus. (e) Proximal view of tarsometatarsal head, posterior side downwards. Threequarters actual size, Photography by M. J. Ashby. See Northcote (p. 266).

Plate 2B (below). Sooty Falcon *Falco concolor*. *Left*. Perched in dead tree. Note dark patch in front of eye, large feet and long wings. *Right*. In flight. Note long wings and dark primaries. (Taken from 35 mm colour slides by R. Liversidge.)

See Liversidge, Richardson and Gubb (p. 268).



collected by Carriker above Yánac in March 1932 was stated to be in "breeding" condition, but with no further details. Frank P. Frazier, Jr. accompanied the Koepckes and Hans Lüthi on their 1966 visit to the upper Santa Eulalia Valley, when the first male specimens were obtained, and recently made available the following notes from that trip (in litt.): "March 26. . . . Once we started getting into the woods I saw a bird in a treetop which I recognized . . . as *Zaratornis*. We didn't see more until a bit later, when we reached a clear spot in the woods. We found that there were plenty of *Zaratornis* in these woods (which cover maybe 30 acres, more vertical than otherwise), appearing to be in pairs. Dr. [Maria] Koepcke found what she thought was an old nest, and saw birds carrying bits of the loose bark of the trees, presumably nesting material. We collected 3 specimens, one of which seemed a bit clearer in plumage and perhaps is a male (hitherto unknown). She said *Zaratornis* went in groups or individually in Zárate, but [she] never [found] any sign of breeding there. Apparently it does here . . . she was most pleased at her findings here about 'her' bird." The above specimens were indeed males, and the above locality has since been proved to be a breeding area.

Between 23 and 31 May 1976, I found 4 nests in active use in Quebrada Tútapac. A fifth was found in the upper Santa Eulalia Valley on 6 May 1978. All were discovered by locating presumably mated pairs in small, isolated tree groves away from the larger wooded areas that occur in ravines or along the bases of cliffs. In both localities these groves were on the south slopes of the quebrada, and received up to 3 more hours of sunlight daily than the north slopes. Considering the very low (freezing) night and early morning temperatures of this environment, the added hours of warmth may influence nest site selection. Though mistletoe was present in trees on the north slopes, few cotingas were seen there, and no nests were found despite diligent searching.

All nests were well hidden within large clumps (0.5–1 m dia.) of *Tristerix* near the ends of tree branches from 4–7 m above ground, and within 1–3 m of a trunk. All were fully shaded by surrounding mistletoe branches and foliage of *Polylepis*.

The fifth nest, which resembled the others very closely in overall size and construction (Plate 1) was collected (LSUMZ-MDW #2312). It was a well-made, rather deep cup of mosses and greenish-grey lichens, the latter being especially concentrated around the perimeter of the cup, which was lined with coarse green and yellow grasses; a few small (15–70 mm) twigs had also been incorporated into that structure. This nest had an outside diameter of 140 × 160 mm, an outside depth of 83 mm, an inside diameter of 76 × 80 mm, and an outside depth of 42 mm. It contained 3 eggs measuring 32.4 × 21.6, 32.6 × 22.1 and 33.3 × 21.6 mm. These were Greenish Glauous of Ridgway (1912), with a distinct wreath of brownish and greyish-brown flecks about the larger end, and a few additional flecks of the same colours scattered over the entire egg.

Two of the 4 Tútapac nests contained 2 young and one egg, a third held 2 eggs and one nestling, and a fourth, which definitely contained at least one young bird, could not be reached for closer examination. One of the above eggs was collected but broken before measurements could be taken (LSUMZ, not catalogued). The nestlings of the 3 examined nests were well-feathered for their small size, and resembled adults in colouration. All were very quiet

in the nest and held their eyes closed even as I lifted them out for closer examination.

Only 2 adults, presumably a male and a female, were observed in the immediate vicinity of each nest site. At nests with eggs, one bird appeared to be doing most, if not all, of the incubation. Incubating adults could almost be touched before flushing to a nearby limb. The second adult of a pair usually appeared only after the first had flushed and uttered alarm calls, or when taped songs were played within the nesting area.

Both adults fed nestlings regurgitated fruit; generally only one adult visited the nest at a time. Of each pair, one adult, presumably the male, was definitely more aggressive and vocal in response to playbacks of songs. Due to work obligations I was unable to obtain detailed information on incubation or feeding rates.

CONSERVATION

Despite its rather restricted geographical and elevational distribution, *Zaratornis Stresemanni* does not appear to be a threatened species. In all 3 of my study areas it was a relatively common bird, and similar suitable habitat surely occurs in many (often inaccessible) quebradas throughout its range. That this unique cotinga is a bird of such restricted habitat does, however, mean that its survival is assured only as long as suitable tracts of its habitat are preserved. A study of the population dynamics of this and other avian species that inhabit *Polylepis* woodlands is badly needed; such studies will enable us at least to make educated guesses concerning what is "suitable" in terms of reserves.

As mentioned by Ferreyra (1977), *Polylepis* woodlands of the Peruvian Andes have probably been greatly reduced in size over the last several thousand years. The scarcity of wood at these elevations in the dry Western Andes has pressured man into cutting *Polylepis*, or queñua as the local people know it, for building purposes, especially roof beams, fence rails and firewood, but at present large tracts of this forest type exist, mainly on steep slopes far from villages. Although cutting, especially for firewood, should be expected to continue, I was told in Yáñac that the introduction of eucalyptus there in the 1920's and 1930's lessened the need for *Polylepis* wood. While in that region, I noticed surprisingly little habitat disturbance, aside from overgrazing from livestock, in the *Polylepis* zone directly above the village (3500 m). Farther away, in my Tútapac study area, no evidence of man could be found.

Fortunately *Zaratornis* seems to prefer small, open groves of trees on steep quebrada slopes. It may never have been numerous in the larger tracts of forest that probably once grew in shaded valleys and on more moderate slopes. Today large areas of suitable habitat remain, protected by law, in the Cordillera Blanca south of Yáñac. Most of this mountain range is included in the recently created Parque Nacional de la Cordillera Blanca. Additionally, most of the *Polylepis* habitat at Pampa Galeras in Ayacucho is within the boundaries of the Reserva Nacional de Pampa Galeras. These 2 refuges provide protection for a great diversity of Andean vertebrates and plants. Above Lima, suitable *Polylepis* habitat is under little human pressure at the present time, but this may change in the future. The establishment of a *Polylepis* reserve in the Department of Lima is highly recommended. This would greatly facilitate badly needed studies of the flora and fauna of this distinct environment.

TAXONOMY

I agree with Snow's (1973) decision that *Zaratornis* and *Ampelion* are closely related. Similarities can be seen in behaviour (e.g. head bobbing, wing and tail flicking displays in *Zaratornis* are similar to those of *Ampelion*), vocalizations (*Ampelion*'s long calls or "song" and call notes are quite like those of *Zaratornis* in quality and pitch) and nest construction (see Vuilleumier 1969 for *A. rubrocristata*). *Doliornis sclateri*, a third member of this group, is morphologically quite like *Ampelion* (and *Zaratornis*), but is divergent vocally; it should also be considered congeneric with *Ampelion*. Another cotingid-like group that resembles *Ampelion* is the Phytotomidae. Behaviourally and vocally plant-cutters are quite similar to *Zaratornis* and *Ampelion* (pers. obs.). Ames (1971) found similarities in syringeal morphology between *Phytotoma* and *Heliochera* (= *Ampelion*).

Acknowledgements: I am grateful to G. R. Graves, J. P. O'Neill, J. V. Remsen, T. S. Schulenberg, and D. Snow who read the manuscript and offered helpful suggestions for its improvement. I thank F. Frazier, E. Mackrill, T. Mischler, M. Robbins, and J. Rowlett for allowing me to use their unpublished observations. M. D. Williams helped with the nest description, and he also preserved the eggs and nest and supplied the photo of them. A. Gentry and R. Ferreyra kindly aided with plant identifications, and J. Kuijt provided information concerning current mistletoe taxonomy. J. Gulledge and R. Beck prepared the sonograph. Two additional friends deserve special mention; Manuel Plenge provided constant support for this study, and transportation to *Polylepis* woodlands above Lima, and Reyes Rivera aided greatly with the field work at Tútupac. Arturo and Helen Koenig made my stays in Lima enjoyable.

Thanks are also due to Antonio Brack E., Marc Dourojeanni R., Susana Moller H. and Carlos Ponce P. of the Direccion General Forestal y de Fauna of the Ministerio de Agricultura, Lima, Peru, who supported this work and provided the necessary permits for it.

Financial support was generously provided by J. S. McIlhenny and the LSUMZ.

References:

- Ames, P. 1971. The morphology of the syrinx in passerine birds. *Bull. Peabody Mus. Nat. Hist.* 37: 1-194.
- Bond, J. 1955. Additional notes on Peruvian birds II. *Proc. Acad. Nat. Sci. Phila.* 108: 227-247.
- Brokaw, H. P. 1976. Birds of Pampa Galeras, Peru. *Delmarva Ornithol.* 11: 26-30.
- Ferreyra, R. 1976. *Endangered Species and Plant Communities in Andean and Coastal Peru*. Symposium, New York Bot. Gard., N.Y., U.S.A.
- 1978. Flora y vegetacion del monte de Zárate. *Bol. Colonia Suiza en el Perú*. Setiembre 1978: 51-58.
- Koepcke, M. 1954. *Zaratornis stresemanni* nov. gen. nov. spec., un cotingido nuevo del Peru. *Publ. Mus. Hist. Nat. "Javier Prado", Ser. A. (Zoologia)* 16: 1-8.
- 1958. Die Vögel des Waldes von Zárate. *Bonn. Zool. Beitr.* 9: 167-168.
- Kuijt, J. 1969. *The Biology of Parasitic Flowering Plants*. Univ. of Cal. Press: Berkeley.
- Lüthi, H. 1970. Blick in die Natur: der geheimnisvolle *Zaratornis*. *Bol. Colonia Suiza en el Perú* 5: 15-17.
- Ridgway, R. 1912. *Color Standards and Nomenclature*. Washington, D.C., published by the author.
- Snow, D. 1973. The classification of the Cotingidae (Aves). *Breviora* 409: 1-27.
- Tovar, O. 1973. Comunidades vegetales de la reserva nacional de vicuñas de Pampa Galeras, Ayacucho, Peru. *Publ. Mus. Hist. Nat. "Javier Prado", Ser. B (Botania)* 27: 1-32.
- Vuilleumier, F. 1969. Field notes on some birds from the Bolivian Andes. *Ibis* 111: 599-608.
- Address:* Theodore A. Parker, III, Museum of Zoology, Louisiana State University, Baton Rouge, La 70893, U.S.A.

Differences in weight and habit of Whooper *Cygnus cygnus cygnus* and Mute *C. olor* Swans in relation to differences in their long bones

by E. Marjorie Northcote

Received 3 July 1980

Whooper Swans *Cygnus cygnus cygnus* are smaller and more terrestrial in their habits than Mute Swans *C. olor*, and, in addition, the former are migratory whereas the latter fly only short distances (Cramp & Simmons 1977). Differences in the long bones may be related to these differences in weight and habit.

Whooper Swans have longer legs than Mute Swans (Table 1), (comparing femur and tarsometatarsus lengths $P < 0.005$) but their toes are shorter in

TABLE I

Ranges in length and width, with means and standard deviations (all in mm), of long bones of Whooper Swans *Cygnus cygnus cygnus* and Mute Swans *C. olor*.

	Whooper Swan		Mute Swan	
	Range (n)	Mean $\pm$ s.d.	Range (n)	Mean $\pm$ s.d.
Humerus				
Length	256-300	} (28) 275.5 $\pm$ 12.18 12.30 $\pm$ 0.96	} (33) 270-311 10.8-13.7	} 290.9 $\pm$ 14.05 12.29 $\pm$ 0.88
Width	10.4-13.8			
Ulna				
Length	242-277	} (25) 259.7 $\pm$ 11.14 10.16 $\pm$ 0.49	} (28) 237-280 8.8-10.7	} 257.3 $\pm$ 13.39 9.80 $\pm$ 0.55
Width	9.4-11.6			
Femur				
Length	100.9-121.5	} (26) 108.78 $\pm$ 5.96 10.46 $\pm$ 0.82	} (34) 95.5-113.1 9.2-11.5	} 104.67 $\pm$ 4.97 10.20 $\pm$ 0.68
Width	9.3-11.6			
Tibiotarsus				
Length	185-218	} (24) 197.87 $\pm$ 9.97 7.96 $\pm$ 0.42	} (32) 183-210 7.0-9.1	} 195.5 $\pm$ 8.58 8.12 $\pm$ 0.49
Width	7.5-9.0			
Tarsometatarsus				
Length	110.2-129.3	} (20) 118.18 $\pm$ 5.99 8.24 $\pm$ 0.37	} (23) 98.6-118.6 7.4-9.0	} 108.76 $\pm$ 6.32 8.40 $\pm$ 0.51
Width	7.7-8.8			

Note. Definitions of measurements are given elsewhere (Northcote 1979, 1980).

relation to the tarsometatarsus (for example, middle toe: tarsometatarsus for a Whooper Swan specimen was 128 mm:118 mm; for a Mute Swan specimen it was 139 mm:109 mm), both of which factors would conduce to more elegant movements on land. In addition, there are morphological differences in the form of the tarsal joint and the tarsometatarsus. The precalcaneal knob on the head of the tarsometatarsus moves in the intercondylar fossa of the tibiotarsus. Compared to Mute Swans, Whooper Swans have a more attenuated knob (Plate 1, b) and a narrower intercondylar fossa (the internal condyle is wider) (Plate 1, a); lateral movement of the tarsus is therefore more restricted and walking is more efficient. Flexor tendons of the toes run behind the tarsal joint and are held in place by ridges and grooves on the posteriorly projecting hypotarsus at the proximal end of the tarsometatarsus. Compared to those of Mute Swans, all 3 grooves in Whooper Swans are more nearly parallel to one another and to the long axis of the bone (Plate 1, d), so

that the flexor tendons pull the toes in a direction more nearly parallel to the midline of the body and this again facilitates walking. Larger cranio-caudal depth of the middle trochlea of the Whooper Swan's tarsometatarsus (Whooper, $16.85 \text{ mm} \pm 0.845$, $n=13$; Mute, $15.40 \text{ mm} \pm 0.526$, $n=12$; $P=0.0005$) allows the corresponding toe to move in the greater arc that is required for taking a longer stride, while greater width across the trochleae (Whooper, $28.16 \text{ mm} \pm 1.417$, $n=12$; Mute, $24.16 \text{ mm} \pm 1.987$, $n=9$; $P<0.0005$) may provide more stability when the bird is standing on one foot whilst taking the stride. In Mute Swans the internal hypotarsal ridge extends posteriorly more than it does in Whooper Swans (Plate 1, c, e). Such modification may be correlated with the presence of relatively larger swimming muscles (Owre 1967).

The humerus in Whooper Swans is shorter than that in Mute Swans (Table 1) ($P<0.0005$) and is also stouter (for the mean ratio of width to length $P<0.0005$). The humerus being the only pneumatized limb bone in swans (Shufeldt 1909), greater stoutness may therefore be related to greater pneumaticity in Whooper Swans. (The volume of the pneumatic space in a 297 mm long Whooper humerus was 54 cc, that in a 304 mm long Mute Swan humerus was 44 cc.) The stouter humerus in Whooper Swans is able to withstand greater bending stresses and in conjunction with their greater wing length (Scott *et al.* 1972, Cramp & Simmons 1977) it may be an adaptation to migration at high altitudes.

These differences, besides showing a relation between form and function, may be useful taxonomically. The morphological characters may also be of help for determining the affinities of an extinct species.

Acknowledgements: For allowing me access to specimens in their care I am grateful to curators at the University Museums of Zoology at Cambridge and Aberdeen and the Colchester & Essex, Royal Scottish, Glasgow and British (Natural History) Museums. I appreciate the travel expenses given to me by the University of Cambridge. Corpses for preparation of skeletons were kindly supplied by the Wildfowl Trust and the R.S.P.C.A. This research was carried out during the tenure of a Calouste Gulbenkian Research Studentship and Fellowship.

References:

- Cramp, S. & Simmons, K. E. L. (eds.) 1977. *The Birds of the Western Palearctic*. Vol. 1 Oxford: University Press.
- Northcote, E. M. 1979. Determination of age and sex of long bones of Mute Swan *Cygnus olor*. *Ibis* 121: 74-80.
- 1980. Sexual dimorphism of the long bones of Whooper Swans *Cygnus cygnus cygnus*. *Ibis* 122: 369-372.
- Owre, O. T. 1967. Adaptations for locomotion and feeding in the Anhinga and the Double-crested Cormorant. *Orn. Mon.* 6: 1-138.
- Scott, P. & The Wildfowl Trust, Slimbridge (eds.). 1972. *The Swans*. London: Michael Joseph.
- Shufeldt, R. W. 1909. *Osteology of Birds*. New York State Museum Bulletin 13: 1-38.

Address: Dr. E. Marjorie Northcote, Dept. of Zoology, Downing Street, Cambridge CB2 3EJ.

The Sooty Falcon *Falco concolor* in the southern Kalahari

by R. Liversidge, P. Richardson and A. Gubb

Received 5 July 1980

The Sooty Falcon *Falco concolor* is a species which breeds in North Africa (Dowsett *in* Snow 1978), but while it is known to winter in the southern Ethiopian Region, knowledge of its exact movements is severely limited. The main wintering area is the dry savannah of Madagascar (Brown & Amadon 1968), but there are also regular records for coastal regions in eastern (Penry 1979a) and southeastern Africa (Clancey 1969). There are very few records of this species being observed inland in southeastern Africa, the southernmost being in Zambia (Penry 1979a). Thus the present observation, which was made on 1 March 1979 and was approximately 42 km south of Unions End (the point where the international boundaries of South Africa, Botswana and Namibia meet), represents the southernmost inland record in Africa for *F. concolor*.

During a routine raptor census drive through the dunes in the Kalahari Gemsbok National Park we flushed a falcon that had evidently been resting in the canopy of a large thorn tree. Even in flight the bird was immediately suspected to be a new species to the area. It flew with a strong heavy flight which was almost Hobby *F. subbuteo*-like, but the wings appeared relatively longer (See Plates) and more powerful (perhaps a slower stroke) and the back appeared more rounded (hunch-backed). Fortunately the bird settled within 200 m in a dead tree, where we were able to observe it in detail from about 50 m at 160× magnification. The bird was uniformly mid-grey in colour. The wings when folded, extended just beyond the tail (See Plates). The cere and preorbital skin were bright yellow and separated by a distinct black area which formed a definite vertical patch, as opposed to only the lores being black as in other species. No longitudinal markings were seen on the chest. The feet were orange-yellow. Here we would like to draw attention to another field character which is not mentioned elsewhere but is evident in the photograph – namely that the bird has larger feet than other similar falcons. The long toes are possibly an adaptation to feeding on bats in flight, a habit which has now been recorded for *concolor* in South Africa (Young, Nicholls, Mendelsohn 1979).

It is evident that *concolor* differs widely in its habits, habitat and feeding behaviour while in its summer and winter ranges. Various descriptions as crepuscular, almost crepuscular and feeding throughout the day (Clapham 1964), its habits probably change according to the availability of prey. The prey ranges from bats and migratory birds, to lizards, termites (Penry 1979a) and insects. All prey is recorded as being taken on the wing. The habitats described vary from totally barren Sahara desert (Booth 1961), peri-urban areas, coastal areas and associations with large tracts of water (Penry 1979b) to savannah or scrub-savannah in Madagascar (Brown & Amadon 1968). The present observation of *concolor* was made soon after we had driven through undulating grassland and had entered a strip of *Acacia erioloba* savannah. In this context, savannah refers to trees being 6–10 m in height and about 40–100 m apart (open to sparse woodland savannah).

The inland movements of *concolor* to and from its wintering areas have

been subject to speculation (Penry 1979b). They are difficult to determine because of the paucity of recorded observations. In Zambia, Penry has recorded 2 movements: October/November and March/April. In South Africa we now have what appear to be regular records from late December (Clancey 1969) to 10 April along the eastern coastline, from Ndumu on the Natal coast in the north to Dwesa on the Transkei coast in the south (Brooke 1978).

The presence of this species in the southern Kalahari on 1 March provides the sort of single record that further confuses an already unclear picture. If it was a lone vagrant, does it represent the southernmost bird of an inland movement through Zambia? The senior author has been conducting quarterly censuses of raptors in the area for 6 years without any previous record, so it seems reasonable to say that the bird is at least uncommon. It was recorded at a time when termite eruptions occur and several migratory raptors often congregate for this food source. The habitat would appear to be similar to that of its main wintering area in the dry Madagascar savannah. Penry (1979b) has observed *concolor* at Chama in southern Zambia. Further south in Botswana there are the Okavango swamps, and from them through to the Kalahari Gemsbok Park there lies a vast region of virtually uninhabited savannah which could well act as a migration route for *concolor*. In this regard, it is interesting to note in comparison that except for a single sight record, Smithers (1964) does not record the Hobby *Falco s. subbuteo* as a bird species of Botswana. In contrast, in the adjacent Kalahari Gemsbok National Park the senior author has recorded as many as 8 at one termite eruption, as well as a great number of other single records. One can therefore conclude that we have little knowledge of whether *subbuteo* occurs in the dry savannah of Botswana and, similarly, whether *concolor* may not also have been overlooked in this region.

One wonders how *concolor* came to be overlooked in Natal until Clancey saw the first bird in 1960. If it had always been present, we doubt that the competent ornithologists of yesteryear could all have missed this species – particularly when one considers that they were quick to shoot any unknown birds. Thus we believe that there has been a change in the status of *concolor* in southern Africa.

References:

- Bennett, G. 1979. Sooty Falcons in Durban. *Albatross* 253: 9.
 Booth, B. D. 1961. Breeding of the Sooty Falcon in the Libyan Desert. *Ibis* 103a: 129–130.
 Brooke, R. 1978. Sooty Falcon in Transkei. *The Bee-eater* 29: 1.
 Brown, L. E. & Amadon, D. 1968. *Eagles, Hawks and Falcons of the World*. London: Country Life Books.
 Clancey, P. A. 1969. The Sooty Falcon as a South African Bird. *Bokmakierie* 21(3): 50–51.
 Clapham, C. S. 1964. The Birds of the Dahlac Archipelago. *Ibis* 106: 376–388.
 Harris, 1979. Quoted in "Recent Field Notes" in *Albatross* 255: 10.
 Penry, E. H. 1979a. Sight records of the Sooty Falcon *Falco concolor* in Zambia. *Bull. Brit Orn. Cl.* 99: 63–65.
 Penry, E. H. 1979b. The Sooty Falcon *Falco concolor* in Zambia 1977–1979. *Bull. Zam. Orn. Soc.* 11: 14–19.
 Smithers, R. H. N. 1964. *A Checklist of the Birds of Bechuanaland Protectorate*. Trustees Nat. Museum, S. Rhodesia.

Snow, D. W. (Ed.). 1978. *An Atlas of Speciation in African Non-passerine Birds*. London: Brit. Mus. (Nat. Hist.).

Young, Nicholls, Mendelsohn, 1979. Quoted in "Recent Field Notes" in *Albatross* 254: 10.

Address: Dr. Richard Liversidge, P. Richardson and A. Gubb, McGregor Museum, Box 316, Kimberley 8300, South Africa.

© British Ornithologists' Club 1981.

Brightly coloured plumage in female manakins (*Pipra*)

by Gary R. Graves

Received 9 June 1980

Female manakins (*Pipra*) are feathered primarily in drab olives and greys and lack the contrasting bright, often glossy crown patches found in males. However, adult females with spots of brightly coloured "male-like" plumage have been previously reported in 5 of 16 recognized species of *Pipra* (*erythrocephala*, Snow 1962, Wetmore 1972; *mentalis*, Wetmore 1972; *pipra*, Zimmer 1936, Haverschmidt 1971; *aureola*, Haverschmidt 1965; *filicauda*, Schwartz & Snow 1978).

The purpose of this note is to add 5 additional species to the list of female *Pipra* that occasionally exhibit brightly coloured feathers, and to call attention to the possible genera-wide occurrence of such characters.

A pooled sample of 162 adult female *Pipra* (11 species) with complete gonad and skull ossification data from Louisiana State University Museum of Zoology was carefully examined for brightly coloured feathers on the crown,

TABLE 1

Numbers (percentages) of female manakins (*Pipra*) in plumage categories (see text).

Species	Categories				Crown colour in males
	1	2	3	4	
<i>erythrocephala</i>	16 (84)	3 (16)	—	—	Yellow
<i>rubrocapilla</i> *	4 (80)	1 (20)	—	—	Scarlet
<i>mentalis</i>	13 (50)	12 (46)	1 (4)	—	Scarlet
<i>chloromeros</i> *	11 (73)	3 (20)	1 (7)	—	Scarlet
<i>pipra</i>	13 (100)	—	—	—	White
<i>isidorei</i>	3 (100)	—	—	—	Bluish-white
<i>caeruleocapilla</i> *	3 (75)	1 (25)	—	—	Light Blue
<i>coronata</i> *	33 (81)	7 (17)	1 (2)	—	Blue
<i>aureola</i>	1 (50)	—	1 (50)	—	Crimson
<i>fasciicauda</i> *	14 (64)	4 (18)	2 (9)	2 (9)	Scarlet
<i>filicauda</i>	7 (64)	3 (27)	1 (9)	—	Scarlet
Totals	119 (74)	34 (21)	7 (4)	2 (1)	

*=Females with brightly coloured feathers reported for first time.

nape and auricular region (Table 1). These feathers, often seen only after careful scrutiny, are similar in colour and glossiness to those found on respective males. Specimens were classified in 4 categories: (1) those with

no brightly coloured feathers; (2) feather(s) visible only after close examination; (3) feathers easily observed at arm's length; and (4) coloured feathers highly visible even under field conditions. Specimens in categories 3 and 4 resemble immature males with incoming crown feathers.

"Male-like" plumage is also known in females of *Chiroxiphia*, *Manacus* and *Chloropipo unicolor* (Wetmore 1972 and pers. obs.). The above data suggest that a larger sample will reveal that all *Pipra* species have some females with brightly coloured feathers, a small percentage of which may resemble immature males.

Preliminary information from museum specimen tags also suggests that sex determination on the basis of iris colouration in female or immature plumaged manakins is not reliable.

Although the adaptive significance, if any, of a single brightly coloured feather is unknown, females that resemble immature males may have a confounding effect in complex manakin social systems, even at low frequencies of occurrence. Clearly then, controls in lek behaviour study should routinely include laparotomy to sex individuals in female or immature plumage.

I thank J. V. Remsen, J. P. O'Neill and S. Y. Graves for comments on an earlier draft.

References:

- Haverschmidt, F. 1965. Variations in plumage of male and female *Pipra aureola*. *Auk* 82: 502.
- 1971. Variations in plumage of male and female White-crowned Manakins *Pipra pipra*. *Bull. Brit. Orn. Cl.* 91: 18.
- Schwartz, P. & Snow, D. 1978. Display and related behavior of the Wire-tailed Manakin. *Living Bird* 17: 51-78.
- Snow, D. 1962. A field study of the Golden-headed Manakin (*Pipra erythrocephala*) in Trinidad, W. I. *Zoologica* 47: 183-198.
- Wetmore, A. 1972. *Birds of the Republic of Panama*. Pt. 3. Washington, D.C.: Smithsonian Institution Press.
- Zimmer, J. 1936. Notes on the Pipridae. *Amer. Mus. Novitates* 889: 29 pp.

Address: Gary R. Graves, Museum of Zoology, Louisiana State University, Baton Rouge, LA 70893, U.S.A. Present address: Department of Biological Science, Florida State University, Tallahassee, Florida 32306, U.S.A.

© British Ornithologists' Club 1981.

We would like to point out that the note which appeared in *Bull. Brit. Orn. Cl.* (1980) 100(3): 205 relating to the first *Puffinus tenuirostris* records from the Malay Peninsula had previously been recorded and published by C. B. Frith (*Emu* 1978(2): 95-97—'Short-tailed Shearwater, *Puffinus tenuirostris* in the Andaman Sea area, Indian Ocean'). We wish to apologise to Mr. Frith for the misunderstandings which led to this regrettable oversight.

P. R. Colston

J. F. Monk

BOOKS RECEIVED

Howard, R. & Moore, A. 1980. *A Complete Checklist of the Birds of the World*. Pp. 1-701. Oxford University Press. £17.50.

This is essentially a comprehensive list of birds of the world, culled from many sources and presented in a useful way by two amateurs. Mayr's sequence of families is used and each species is listed under its generic name (Anglicised names in parenthesis), the sequence bearing "most reference to Peters' *Checklist*, but where that list has been updated and revised, then the more recent version has been used" (evidently in a purely arbitrary way). Subspecies are treated similarly and are arranged geographically usually from NW to SE, and usefully, the country or countries where found are cited for each. An absence of running heads to indicate the main family included on each page in a book of 700 pages makes use of the index of scientific names constantly and tiresomely necessary.

A scan through the nomenclature and sequence reveals a greater degree of accuracy than is shown regrettably by the references. For example, of 3 main works extensively consulted, the titles of two, Peters' *Checklist of Birds of the World* and Vaurie's *The Birds of the Palearctic Fauna*, are misquoted throughout, and in the authors of the *Reference List of the Birds of the World* Morony's name is invariably incorrectly spelt. This carelessness does not generate any confidence in the accuracy of the rest of the references at least.

Production is up to the usual high standard of O.U.P. but the editing and layout leave much to be desired.

Salim Ali. 1979. *Indian Hill Birds*. Pp. i-lvi + 1-188. 64 plates in colour painted by G. M Henry and 8 plates of black-and-white photographs. End paper maps. Oxford University Press, Delhi. £11.95. (Received Sep. 1980.)

A reprint, with a short new preface, of the first (and only) edition of 1949. Some 300 Himalayan and other hill species are covered, 117 of them pictured in (rather garishly reproduced) colour. There are useful distribution tables and field identification charts as well as the excellent text, grown less out of date than might be expected in the past 30 years. (The review copy had pages 173-188 and a second end paper bound in mistakenly at the end of the book.)

Parmelee, D. F. 1980. *Bird Island in Antarctic Waters*. Pp. xi + 1-140. Profusely illustrated. University of Minnesota Press. \$18.95.

"A birding experience" while on field study in this 10 sq. km of rocky tussock-covered outcrop at the western tip of South Georgia crowded with penguins, seabirds and fur seals. The informative text—though lightly written, its biological content is evidently sound and well-informed—is well illustrated by the author's excellent photographs (5 in colour) and some attractive and unusual paintings (12 in colour, some of which colour's realism is difficult to believe, at least in the review copy). Attractively produced.

Riley, T. 1981. *The Year of the Golden Eagle*. Pp. 1-32. Coloured illustrations. Dent: London. £3.95.

Riley, T. 1981. *The Year of the Barn Owl*. Pp. 1-32. Coloured Illustrations. Dent: London. £3.95.

Two of a series of picture books for intelligent children. The lives of the two birds are simply described during the year's changes, with accurate natural history details, by John Andrews of the Royal Society for the Protection of Birds, nicely illustrated by Terry Riley to include besides much of the prey and wildlife in the two species' habitats, the Golden Eagle in western North America, the Barn Owl in southern France. The end sections are in the form of a field guide to each of the animals, birds, insects and flora mentioned in the text.



NOTICE TO CONTRIBUTORS

Papers, whether by Club Members or by non-members, should be sent to the Editor, Dr. J. F. Monk, The Glebe Cottage, Goring, Reading RG8 9AP, and are accepted on the understanding that they are offered solely for publication in the *Bulletin*. They should be typed on one side of the paper, with double-spacing and a wide margin, and submitted with a *duplicate copy on airmail paper*.

Scientific nomenclature and the style and lay-out of papers and of References should conform with usage in this or recent issues of the *Bulletin*, unless a departure is explained and justified. Photographic illustrations, although welcome, can only be accepted if the contributor is willing to pay for their reproduction.

An author wishing to introduce a new name or describe a new form should append *nom.*, *gen.*, *sp.* or *subsp. nov.*, as appropriate, and set out the supporting evidence under the headings "Description", "Distribution", "Type", "Measurements of Type" and "Material examined", plus any others needed.

A contributor is entitled to 10 free reprints of the pages of the *Bulletin* in which his contribution, if one page or more in length, appears. Additional reprints or reprints of contributions of less than one page may be ordered when the manuscript is submitted and will be charged for.

BACK NUMBERS OF THE BULLETIN

Available post free on application to Dr. D. W. Snow, Zoological Museum, Tring, Herts HP23 9AP, England, as follows: 1973-1979 (Vols. 93-99) issues (4 per year), £2.00 each issue; 1969-72 (Vols. 89-92) issues (6 per year), £1.50 each; pre-1969 (generally 9 per year) £1.00 each. Indices £1.00 for Vol 70 and after, £2 for Vols 50-69, £2.50 for Vol 49 and before. Long runs (at least 10 years) are available at reduced prices on enquiry, higher prices may be charged otherwise for scarce numbers.

Vol. 100 No. 1 £4.00, No. 2, 3 & 4 £2.00 each issue.

MEMBERSHIP

Only Members of the British Ornithologists' Union are eligible to join the Club: applications should be sent to the Hon. Treasurer, Mrs. D. Bradley, 53 Osterley Road, Isleworth, Middlesex, together with the current year's subscription. The remittance and all other payments to the Club should always be in *sterling* unless an addition of £1.00 is made to cover bank charges for exchange, etc. Payment of subscription entitles a Member to receive all *Bulletins* for the year. Changes of address and revised bankers' orders or covenants (and any other correspondence concerning Membership) should be sent to the Hon. Treasurer as promptly as possible.

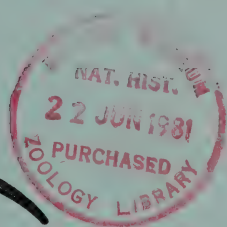
SUBSCRIPTION TO BULLETIN

The *Bulletin* may be purchased by non-members on payment of an annual subscription of £12.00 (postage and index free). Send all orders and remittances in *sterling*, unless an addition of £1.00 is made to cover bank charges, to the Hon. Treasurer. Single issues may be obtained as back numbers (see above).

CORRESPONDENCE

Correspondence about Club meetings and other matters not mentioned above should go to the Hon. Secretary, R. E. F. Peal, 2 Chestnut Lane, Sevenoaks, Kent TN13 3AR.

Bulletin of the
British Ornithologists' Club



Edited by
Dr. J. F. MONK

FORTHCOMING MEETINGS

Tuesday, 7 July 1981 in the Senior Common Room, South Side, Imperial College, Prince's Gardens, S.W.7 at 6.30 p.m. for 7 p.m. Mr J. H. Elgood, author of the forthcoming B.O.U. Check-list on birds of Nigeria, will speak on *The Birds of Nigeria*. Those wishing to attend should send their acceptance with a cheque for £4.95 a person to the Hon. Secretary at 2 Chestnut Lane, Sevenoaks, Kent TN13 3AR (telephone Sevenoaks 0732 50313) to arrive not later than first post on Thursday, 2 July 1981.

Tuesday, 15 September 1981 at the same venue at 6.30 p.m. for 7 p.m. Mr C. J. Mead will speak on *Autumn Birds in Texas*. Those wishing to attend should send their acceptance with a cheque for £4.95 a person to the Hon. Secretary (address above) to arrive not later than first post on Thursday, 10 September 1981.

Tuesday, 17 November 1981 at the same venue and time, Mr P. J. Hayman on *Sea Birds*.

Tuesday, 12 January 1982 Dr T. J. Seller on *Are Bullfinches and Fruit Crops really incompatible?*

Tuesday, 2 March 1982 Professor Gordon H. Orians on *Mates and Real Estate in Blackbird Social Systems*.

Gifts or offers for sale of unwanted back numbers of the *Bulletin* are very welcome

The Club has no reference copies of Vol. 48 and many earlier issues; these would be very specially appreciated

COMMITTEE

D. R. Calder (*Chairman*)
R. E. F. Peal (*Hon. Secretary*)
Dr. J. F. Monk (*Editor*)
J. G. Parker
R A. N. Croucher

B. Gray (*Vice-Chairman*)
Mrs. D. M. Bradley (*Hon. Treasurer*)
R. D. Chancellor
Revd. G. K. McCulloch, O.B.E.

Bulletin of the BRITISH ORNITHOLOGISTS' CLUB

Vol. 101 No. 2

Published: 19 June 1981

ANNUAL GENERAL MEETING

The Annual General Meeting of the British Ornithologists' Club was held at Imperial College, London, S.W.7, on Tuesday, 19 May 1981 at 6 p.m. with Mr. D. R. Calder in the Chair. Eight Members were present.

The Minutes of the Annual General Meeting held on 13 May 1980 (*Bull. Brit. Orn. Cl* 100: 135) were approved and signed by the Chairman.

The Report of the Committee and Accounts for 1980 were presented. The Hon. Treasurer stated that expenditure incurred by reason of the extra size of the special centenary number (Vol. 100 No. 1) and met out of current income was over £600, this being additional to the part of the extra costs of that number covered by donations kindly made to the Club. In view of this non-recurring item, the excess of income over expenditure of £242 was gratifying. Mr. R. A. N. Croucher proposed and Mr. B. Gray seconded that the Report of the Committee and Accounts for 1980 be received and adopted and this was carried unanimously.

There being no nominations additional to those of the Committee, the following were declared duly elected:—

Hon. Treasurer: Mrs. D. M. Bradley (re-elected).

Hon. Secretary: Mr. R. E. F. Peal (re-elected).

Committee: the Reverend G. K. McCulloch, O.B.E. (*vice* Mr. C. F. Mann, who retired by rotation).

The Meeting closed with a vote of thanks to the Chairman at 6.30 p.m.

The seven hundred and thirty-third Meeting of the Club was held in the Senior Common Room, South Side, Imperial College, London, S.W.7 on Tuesday 3 March 1981 at 7 p.m. The attendance was 27 Members and 16 guests.

Members present were: D. R. CALDER (*Chairman*), F. B. S. ANTRAM, Mrs DIANA BRADLEY, R. A. N. CROUCHER, Dr R. A. CHEKE, P. J. CONDER, R. J. FARMER, D. J. FISHER, A. GIBBS, B. GRAY, D. GRIFFIN, P. A. D. HOLLAM, A. M. HUTSON, Revd. G. K. McCULLOCH, C. F. MANN, Dr J. A. K. MELDRUM, Dr J. F. MONK, P. J. OLIVER, J. B. PARKER, R. E. F. PEAL, R. C. PRICE, P. S. REDMAN, P. J. SELLAR, Dr D. W. SNOW, S. A. H. STATHAM, C. E. WHEELER and C. R. WOOD.

Guests present were: Mrs A. M. ARCHER, Miss M. BARRY, D. BRADLEY, Dr J. D. BRADLEY, Dr M. de L. BROOKE, Miss C. BUTLER, Dr JUDITH A. COLES, Miss S. N. CONDER, Miss H. FISHER, Dr J. A. FOWLER, Mrs I. McCULLOCH, B. W. M. O'BRIEN, T. W. PARMENTER, Mrs R. E. F. PEAL, P. D. PHILLIPS and Mrs B. K. SNOW.

The speaker was Dr M. de L. Brooke, who gave an illustrated address of great interest on aspects of the breeding of Manx Shearwaters *Puffinus puffinus* on Skokholm and Skomer. He dealt especially upon the factors governing the timing of the onset of breeding and a stimulating discussion followed.

The seven hundred and thirty-fourth Meeting of the Club was held in the Senior Common Room, South Side, Imperial College, London, S.W.7 on Tuesday 19 May 1981 at 7 p.m. The attendance was 25 Members and 14 guests.

Members present were: D. R. CALDER (*Chairman*), Major N. A. G. H. BEAL, R. M., K. F. BETTON, Dr G. BEVEN, Mrs. D. M. BRADLEY, Dr. R. A. CHEKE, Dr. T. J. CHRISTMAS, R. A. N. CROUCHER, Sir HUGH ELLIOTT, Bt., Miss C. EDITH

Income and Expenditure Account for the year ended 31st December 1980

	1979	1980
INCOME	£	£
SUBSCRIPTIONS RECEIVED		
Members Subscriptions	1,874	1,887
Subscribers	1,173	1,314
	3,047	3,201
DONATIONS RECEIVED	348	111
INVESTMENT INCOME		
General Fund	397	592
Trust Fund	20	34
	417	626
RENT RECEIVED		
Property "Clovelly" Tring	468	593
Leas: Repairs and Insurance	37	111
	431	482
INCOME TAX RECOVERED		
Deeds of Covenant	187	189
Other	16	15
	203	204
SALES OF BULLETIN BACK NUMBERS	857	201
	5,303	4,825
EXPENDITURE		
Printing and Publication of Bulletin	2,722	5,279
Printing Back Numbers	664	—
	3,386	5,279
Less: Authors costs	205	427
Amount transferred from Bulletin Fund	3,181	1,160
	786	3,692
Postage and Distribution of Bulletin	3,967	350
PUBLICATION AND DISTRIBUTION COST OF BULLETIN		
Printing, Postage and Stationery	4,042	4,042
Telephone	298	26
Insurance	20	20
Notices of Meeting	27	27
Legal Charges (appointment of trustees)	58	58
Audit and Accountancy Charges	60	60
Bank Charges	22	22
Treasurer's Expenses	95	20
Miscellaneous Expenses	262	10
Depreciation: Projector and Screen	10	4,583
	4,448	£242
EXCESS OF INCOME OVER EXPENDITURE	£855	—

Note Expenses included in Miscellaneous and Treasurer's Expenses in the 1979 Accounts have been analysed in the 1980 Accounts under specific heads of expenditure.

We have prepared the attached Balance Sheet as at 31st December 1980 and Income and Expenditure Account for the year ended on that date from the books, vouchers and information presented to us and certify that they are in accordance therewith.

Balance Sheet as at 31st December, 1980

	1979	1980
GENERAL FUND	£	£
Balance at 31st December 1979	1,514	2,369
Add: Excess of Income over Expenditure	855	242
	2,369	2,611
BULLETIN FUND		
Balance at 31st December 1979	—	660
Royal Society	400	—
British Ornithologists' Union	150	—
Mount Trust	—	400
Donations—British Petroleum	—	100
Members	110	—
	660	1,160
Less: Amounts transferred and deducted from printing and publication of Bulletin	—	1,160
	—	—
TRUST FUND		
F. J. F. BARRINGTON LEGACY		
Balance at 31st December 1979	—	445
	—	£3,056
Represented by:...		
FIXED ASSETS		
Projector and Screen at cost	100	100
Less: Aggregate Depreciation	—	100
	—	—
GENERAL FUND INVESTMENTS		
£100 8½% Treasury Loan 1980/82 at cost	100	100
Less: Reserve brought forward	20	20
	80	80
TRUST FUND INVESTMENTS		
£880 ½% Treasury Stock 2008/12 at cost	—	445
CURRENT ASSETS		
Stock of Bulletin—Nominal Value	1	1
Cash at Banks—Current Account	679	812
Post Office Giro Account	90	78
Deposit Account	2,176	1,284
National Savings Bank	2,196	3,105
Tax Repayment due	187	—
	5,729	5,280
LESS: CURRENT LIABILITIES		
Subscriptions received in advance—Members	217	1,439
Sundry Creditors	819	1,407
Rent received in advance	234	—
	2,790	2,749
NET CURRENT ASSETS	2,939	2,531
	£3,474	£3,016

GODMAN, B. GRAY, D. GRIFFIN, P. HOGG, Revd. G. K. McCULLOCH, C. F. MANN, P. J. OLIVER, J. G. PARKER, R. E. F. PEAL, E. M. RAYNOR, Dr. C. G. STACK, S. A. H. STATHAM, K. V. THOMPSON, C. E. WHEELER, Lieut.-Col. T. C. WHITE and M. W. WOODCOCK.

Guests present were: E. J. BACK, Mrs. J. D. BACK, Miss M. BARRY, Mrs. G. BEVEN, D. BRADLEY, Dr. JUDITH A. COLES, A. C. ELEY, Miss K. FRANCIS, J. KING, Mrs. I. McCULLOCH, Mrs. C. F. MANN, Mrs. P. J. OLIVER, Miss M. SAUNDERS, and Mrs. B. J. WOODCOCK.

Mr. C. F. Mann gave an address on "Forest Birds in Kenya", illustrated with colour slides of many of the bird species inhabiting Kenya forests, which was much appreciated.

The forest avifauna of Kenya were considered in four sections; West, Central, Coast and Isolates. Comparisons were made between these areas and some attempt was made to show the affinities between them. The effect of altitude on distribution was also discussed. Speculation was made on the origins of the forest avifauna, contrasting the late R. E. Moreau's 'pluvial theory' with more recent pollen analysis studies, which suggest that the forested areas of tropical Africa may never have been much greater in the past than they are today. Resistance to arthropod-borne diseases was suggested as a possible factor in altitudinal distribution.

Last record of the Cebu Island subspecies of the Orange-bellied Flowerpecker

Dicaeum trigonostigma pallidius

by Dorothy M. Richardson and Allan J. Baker

Received 2 June 1980

The Cebu Island subspecies of the Orange-breasted Flowerpecker, *Dicaeum trigonostigma pallidius*, is now believed to be extinct. Salomonsen (1967) lists as the last record of this taxon a specimen collected on Cebu Island in 1906. According to Rabor (1959) this specimen was collected by R. C. McGregor. However, the Royal Ontario Museum collection contains a skin collected by J. J. Mounsey (JFM 514) at Camp Ialiti, Cebu Island, on 26 July 1910 (data from original field collector's label).

The Royal Ontario Museum specimen (ROM 56154) is greyish-blue above, and although the mantle feathers are not well preserved, two have bright orange distal ends, characteristic of *D. trigonostigma* (Sharpe 1885). The underparts are almost uniform pale yellow except for a brighter yellow suffusion on the upper breast feathers. These features distinguish the specimen from *D. t. dorsale*, which is endemic to the neighbouring islands of Masbate, Panay and Negros. The latter is much darker blue above and brighter yellow below (Delacour & Mayr 1946, du Pont 1971) and the breast is bright orange (Bourne & Worcester 1894). Immature males of *D. t. dorsale* have streaks of orange on the breast (Bourne & Worcester 1894), ruling out the possibility that Mounsey's specimen was a vagrant from neighbouring islands.

There is evidence that Mounsey was indeed collecting on Cebu in 1909-10, although Rabor (1959) claims that no serious collecting was done there between 1906 and 1947. The skin discussed above was originally part of J. H. Fleming's collection (JHF 24408), now in the Royal Ontario Museum. That collection had "some six hundred and twenty-five skins from the Philippines . . . collected between 18 April 1909 and 21 November 1910, by J. J. Mounsey, an engineer. It appears that the places visited by him were

Mindoro, Luzon, Samar, Leyte, Cebu and Mindanao" (Hachisuka 1931). The Royal Ontario Museum has 7 birds of the genus *Dicaeum* collected by Mounsey between 1 May 1909 and 12 October 1910. One, *Dicaeum a. australe*, was also collected at Camp Ialiti, Cebu, but on 24 July 1910. We conclude that *D. trigonostigma pallidus* was extant on Cebu Island until at least July of 1910.

Acknowledgements: We thank Dr. F. Salomonsen for his assistance with the literature and Pat Urquhart for secretarial assistance.

References:

- Bourns, F. S. & Worcester, D. C. 1894. Preliminary notes on the birds and mammals collected by the Menage scientific expedition to the Philippine Islands. *Occ. Pap. Minn. Acad. Nat. Sci.*: 1-64.
- Delacour, J. & Mayr, E. 1946. *Birds of the Philippines*. New York: MacMillan.
- du Pont, J. E. 1971. *Philippine Birds*. Greenville: Delaware Museum of Natural History.
- Hachisuka, M. 1931. *The Birds of the Philippine Islands*, with notes on the mammal fauna. 1. London: Witherby.
- Rabor, D. S. 1959. The impact of deforestation on birds of Cebu, Philippines, with new records for that Island. *Auk* 76: 37-43.
- Salomonsen, F. 1967. Family Dicaeidae, flowerpeckers. In Paynter (ed.), *Check-list of Birds of the World*. XII. Museum of Comparative Zoology, Cambridge, Massachusetts.
- Sharpe, R. B. 1885. Catalogue of the Passeriformes or perching birds, in the collection of the British Museum. Fringilliformes. 1. London.

Address: D. M. Richardson and Dr. A. J. Baker, Department of Ornithology, Royal Ontario Museum, 100 Queen's Park, Toronto, Ontario, Canada M5S 2C6.

© British Ornithologists' Club 1981.

Specimens of extinct, endangered or rare birds in the Merseyside County Museums, Liverpool

by C. T. Fisher

Received 10 June 1980

This inventory covers specimens of extinct, endangered or rare bird taxa held by the Department of Vertebrate Zoology, Merseyside County Museums.

Two major collections form the nucleus of these holdings. That of Lord Edward Smith Stanley, later XIIIth Earl of Derby, was bequeathed to the City of Liverpool in 1851 and was the foundation of the present institution. Canon H. B. Tristram's first collection was sold to the museum in 1896, whilst his second went to the Academy of Natural Sciences, Philadelphia in 1906. Most Derby and Tristram material is reasonably well documented and the former is also supported by archival records held in the Merseyside County Museums, the City of Liverpool Library or at Knowsley Hall, Liverpool. An account of many of the type specimens included in these collections has been published by Wagstaffe (1978).

The criterion for inclusion of a taxon in the present list is mention by King (1978-1979), Fisher *et al.* (1969) or Greenway (1967), while the recognition of a taxon as extinct follows Greenway (1967) and Morony *et al.* (1975).

NOTATION

Unless otherwise indicated, each specimen is adult and in the form of a cabinet skin. The order and nomenclature of Peters (1931-1970) is followed

except where Morony *et al.* (1975) or Greenway (1967) are used in place of the unpublished volumes 8 and 11.

- coll. —collected by.
- ex. —unsexed specimen.
- leg. —received from.
- n.l. —unlabelled specimen.
- † —extinct taxon.
- [D] —collection of the XIIIth Earl of Derby.
- [T] —collection of Canon H. B. Tristram.
- B.M.N.H. —British Museum (Natural History), London.
- B.T.O. —British Trust for Ornithology.
- R.I.L. —Royal Institution, Liverpool.
- R.S.B.A. —Royal Society and British Association joint committee for the Zoology of the Sandwich Islands (donated by Alfred Newton, President).
- U.S.N.M. —United States National Museum, Smithsonian Institution, Washington.
- Z.S.M. —Museum of the Royal Zoological Society, London.

Non-Passerines

- Spheniscus demersus* (Linnaeus): 2 exx.—off the Cape of Good Hope, coll. E. L. Layard, [T]. ♂—Seal Island, Table Bay, S. Africa, [D] leg. Warwick 1845. Imm. ♂, 2 exx. (1 mounted)—n.l.
- Diomedea albatrus* Pallas: second year ♂, 1 ex.—Hakodati, Japan, coll. Pryer, [T] leg. H. Seebohm.
- Procellaria parkinsoni* G. R. Gray: juv.—Wellington, New Zealand, coll. 1873, [T].
- Pterodroma caribbaea* Carte: ♂—Cinchoma Point, Jamaica, coll. W. Bock 17.11.1879, [T] leg. E. Newton.
- Pterodroma phaeopygia phaeopygia* (Salvin): ♂—Wenman Island, Galapagos Group, coll. R. H. Beck 3.8.1897, leg. W. Rothschild 1899.
- Pterodroma leucoptera leucoptera* (Gould): 1 ex.—Makira, Solomon Islands, coll. G. E. Richards, [T].
- Phalacrocorax carunculatus carunculatus* (Gmelin): juv.—Queen Charlotte Sound, New Zealand, leg. W. L. Buller 1901.
- Nannopterum barrisi* (Rothschild): ♂—Narborough Island, Galapagos Group, coll. G. M. Green, leg. Rosenberg 1902.
- Zebrilus undulatus* (Gmelin): 1 ex.—River Amazon, [D] leg. J. Gould 1835. 1 ex.—[D] leg. Tucker 1834. Both these specimens are described and figured in Forbes (1901). 1 ex.—[D].
- Geronticus eremita* (Linnaeus): ♂, ♀, imm. ♀—Saracenic Castle, Birajak, R. Euphrates, coll. H. B. Tristram 9.6.1881, [T]. Tristram (1882) describes the collection of these 3 birds. ♂—Sahara, coll. H. B. Tristram 3.6.1856, [T]. ♂—Ethiopia, [D] leg. J. Gould.
- Geronticus calvus* (Boddaert): 3 ♀♀—Transvaal, S. Africa, coll. T. Ayres 1871, [T]. 2 ♂♂—[D] from Derby Aviary (one died in 1846). Imm.—South Africa, coll. Tucker 25.2.1839, [D]. 1 ex., imm.—South Africa, coll. Burk, [D].
- Nipponia nippon* (Temminck): 1 ex.—Shanghai, China, coll. Michie, [T] leg. Swinhoe 1889. Imm.—Japan, [T]. 1 ex.—Yezo, Japan, [D] leg. J. Leadbeater 1841.
- Lophotibis cristata* (Boddaert): ♂—Malagasy, [T] leg. Liverpool Museum (previously from E. Gerrard). 4 ♂♂, 2 ♀♀—Malagasy, leg. E. Gerrard.
- Nesochen sandvicensis* (Vigors): type specimen—Hawaiian Islands, [T] leg. Z.S.M. (previously obtained from T. C. Eyton). ♀—Hawaiian Islands, [D] (died in Derby Aviary 1837). Juv.—[D] (hatched in Derby Aviary 13.4.1834 and died two days later).
- Chloephaga rubidiceps* Sclater: ♂—Falkland Islands, coll. W. Gunn, on Sir J. Franklin's expedition, [T]. 1 ex.—Falkland Islands, coll. J. D. Hooker, [D] leg. W. Hooker 1845. ♀—Falkland Islands, [D] leg. B. Isaacson 1844. 1 ex.—Falkland Islands, coll. Whittaker, [D] leg. J. Leadbeater 1842. 1 ex.—Falkland Islands, coll. Antarctic expedition, [D] leg. B. Isaacson. 1 ex.—leg. B.M.N.H. 1898.

- Dendrocygna arborea* (Linnaeus): 1 ex.—Almezein, Santa Domingo, coll. A. S. Toogood 1887, [T]. 1 ex.—Jamaica, [T] leg. T. C. Eyton. ♂—[D] (died in Derby Aviary 1847).
- Asarcornis scutulata* (S. Müller): 2 ♀♀—Kitta Djawa, Sumatra, coll. H. O. Forbes, [T].
- Nesonetta aucklandica* G. R. Gray: ♀—Auckland Islands, coll. Travers 1894, [T]. 2 ♂♂, 2 ♀♀—Auckland Islands, leg. W. Buller 1901.
- †*Rhodonessa caryophyllacea* (Latham): ♂—Bengal, India, [T] leg. Lilford (died in Lilford Aviary 1882). 2 ♂♂, ♀—[D] leg. T. C. Eyton. ♀—leg. H. A. Fooks 1962 (died in Calcutta Zoological Gardens 1930). ♀ (mounted)—n.l.
- †*Camptorhynchus labradorius* (Gmelin): ♂ (mounted)—Halifax Harbour, Nova Scotia, Canada, coll. J. W. Wedderburn, Apr. 1852, [T] leg. J. W. Wedderburn 1876. Imm. ♂ (mounted)—[D] leg. J. Gould 1833. ♀ (mounted)—North America, [D] leg. T. C. Eyton.
- Mergus octosetaceus* Vieillot: ♂—Bahia, Brazil, leg. C. J. Leyland 1859.
- Buteo galapagoensis* (Gould): imm: ♀—Albemarle Island, Galapagos Group, coll. Harris 21.11.1897. ♂—Albemarle Island, coll. Beck 18.11.1897. 1 ex.—Albemarle Island, coll. Harris 15.11.1897. All 3 leg. W. Rothschild 1899.
- Buteo solitarius* Peale: 1 ex.—Island of Hawaii, coll. Aug. 1891, [T] leg. S. B. Wilson.
- Leucopternis polionota* Kaup: 1 ex.—[D].
- Morphnus guianensis* (Daudin): 1 ex. (mounted)—n.l.
- Harpia harpyja* (Linnaeus): 1 ex. (mounted)—n.l.
- Pithecopaga jefferyi* Ogilvie-Grant: 1 ex.—Philippine Islands, leg. B.T.O. 1969 (previously Hewitt collection, died in Paignton Zoo).
- Haliaeetus albicilla* (Linnaeus): ♂—Christiansund, Nordmore, Norway, coll. B. Hansen 28.10.1926, leg. C. Richmond-Brown 1966. 2 exx. (mounted)—n.l.
- Falco peregrinus anatum* Bonaparte: ♀—Beaverhills Lake, Alberta, Canada, coll. W. Rowan 4.8.1938. ♂—Beaverhills Lake, coll. W. Rowan 20.8.1929. ♀—Beaverhills Lake, coll. W. Rowan 24.9.1924. ♂—Crescent Beach, Nova Scotia, Canada, coll. S. K. Patten 22.9.1924. ♀—Drumheller, Alberta, coll. W. Rowan, May 1924. All 5 leg. B.T.O. 1969 (previously Hewitt collection). Imm.—Swan Island, Maine, U.S.A., coll. Dyer 25.2.1867.
- Falco peregrinus cassini* Sharpe: ♂, 1 ex.—Chile, [D] leg. Bridges 1842.
- Falco punctatus* Temminck: 1 ex.—Mauritius, coll. 1873, [T] leg. A. C. Smith.
- Falco araea* (Oberholser): 2 ♂♂, ♀—Félicité, Seychelles, coll. H. L. Warry 1879, [T]. ♂—Seychelles, coll. E. P. Wright 1868, [T] leg. A. Newton.
- Megapodius laperouse senex* Hartlaub: 1 ex.—Pelew Islands, coll. Kubary 1878, [T].
- Macrocephalon maleo* S. Müller: 1 ex.—North Celebes, coll. von Faber 1883, [T] leg, Leiden Museum.
- Crax alberti alberti* Fraser: ♀—[D].
- Crax pinima* Pelzel: ♀—Brazil; [D].
- Pipile jacutinga* (Spix): 1 ex.—[D].
- Oreophaps derbianus* G. R. Gray: 1 ex.—Volcan de Fuego, Duenas, Guatemala, [T] leg. O. Salvin. Type specimen: ♂—Volcan de Fuego, coll. J. Quinones c. 1843, [D] leg. C. Klee per J. Bates.
- †*Tympanuchus cupido cupido* (Linnaeus): ♂—leg. W. H. Barrow 1957 (previously Adcock collection).
- †*Coturnix novaezelandiae* Quoy and Gaimard: ♀—Plains, Port Cooper, Middle Island, New Zealand, coll. F. Strange 4.4.1849, [D] leg. J. Gould 1850. ♂—New Zealand, coll. F. Strange, [D] leg. J. Gould 1850. ♂—New Zealand, [D] leg. Warwick 1845. ♂, ♀ (mounted)—n.l.
- †*Ophrysa superciliosa* (J. E. Gray): type specimens: ♂, ♀—Himalayas, India, [D] leg. Tucker 1836.
- Tragopan melanocephalus* (J. E. Gray): ♂, ♀—Kooloo, coll. G. Henderson (♂ Feb. 1870), [T]. ♀—Northwest Himalayas, [T] leg. J. H. Gurney. ♂—India, [D] leg. Lockett 1849. Imm. ♂—[D] leg. Warwick 1848. ♂—[D] leg. J. Leadbeater 1831. ♀—[D] leg. Tucker 1831. Imm. ♂—Punjab, India, coll. F. H. Kirby, leg. F. H. Kirby 1872. ♂—Gurwhal, India. ♂—n.l. ♀ (mounted)—n.l.
- Tragopan blythi* (Jerdon): ♂—leg. Spedan-Lewis Trust 1975.
- Tragopan caboti* (Gould): ♂ (mounted)—Himalayas, India.
- Crossoptilon crossoptilon crossoptilon* (Hodgson): ♂—Ta-Chun-Lu, Tibet, coll. Pratt 1890, [T] leg. H. Seebohm 1893.
- Hierophasis swinhoii* (Gould): ♀—Tamsui, Formosa, coll. R. Swinhoe, Mar. 1865; [T]. ♂—Formosa, coll. R. Swinhoe, [T]. Juv.—leg. E. Bartlett 1871 (died in Zoological Gardens, London). ♀—Formosa, leg. H. Bright.
- Lobiphasis bulweri* Sharpe: ♂, ♀—Mt. Kalulong (2000 ft), Borneo, coll. C. Hose, May 1893, [T].

Catreus wallichii (Hardwicke): ♂—Gurlaah-in-Kotckhaie, coll. G. Henderson 6.2.1871, [T] leg. G. Henderson. ♀—[D] leg. J. E. Gray 1845. ♂—Himalayas, [D] leg. Tucker 1832. ♂—[D]. 2 juvs.—leg. L. Fraser 1866 (died in Zoological Gardens, London, 1865). ♂—Punjab, leg. F. H. Kirby 1872. ♂ (mounted)—n.l.

Syrnaticus ellioti (Swinhoe): 2 ♂♂, ♀—Ningpo, China, coll. R. Swinhoe 1872, [T]. ♂—leg. Meinertzhagen 1904 (died in captivity 1893).

Polyplectron emphatum Temminck: ♂—Palawan, Philippines, coll. A. Everett, Feb. 1894, eg. E. Gerrard 1899. ♂ (mounted)—leg. Cheltenham College Museum.

Mesoenas unicolor (Desmurs): ♂—Savary, Malagasy, coll. Audebert 2.4.1878, [T] leg. Leiden Museum.

Grus americana (Linnaeus): 1 ex. (mounted)—n.l.

†*Cabalus modestus* (Hutton): 1 ex.—Mangare, Chatham Islands, coll. W. Hawkins 1892, [T] leg. H. O. Forbes. 1 ex. (pelvis only)—Chatham Islands.

Tricholimnas sylvestris (Slater): 1 ex.—Lord Howe Island, coll. E. L. Layard, [T].

†*Nesoclopeus poeciloptera* (Hartlaub): 1 ex.—Rewa river, Fiji Islands, coll. 1881, [T] leg. V. Williamson.

†*Porzana palmeri* Frohawk: 1 ex. (skin with attached sternum)—Laysan Island, coll. Palmer 1892, [T] leg. Hartlaub.

†*Pareudiastes pacificus* Hartlaub and Finsch: 1 ex.—Samoa, coll. S. J. Whitmee 1873, [T]. ♀—Punai, Samoa, coll. S. J. Whitmee 1872, [T].

†*Porphyrio albus* (White): 1 ex. (mounted) (the type of *Porphyrio stanleyi* Rowley)—? Lord Howe Island, [D] leg. W. Bullock 1819.

Rhynchotus jubatus J. Verreaux and Des Murs: ♂—Baie du Sud, New Caledonia, coll. E. L. Layard 4.7.1878, [T]. 1 ex. (complete skeleton)—New Caledonia, leg. E. Gerrard 1883.

Chloriotis nigriceps (Vigors): ♂—Sirsa, Punjab, India, coll. G. Henderson 1870, [T]. ♂—[D].

Haematopus ostralegus meadewaldoi Bannerman: ♂—Isla Graciosa, Canary Islands, coll. E. G. Meade-Waldo and H. B. Tristram 7.4.1890, [T].

Vanellus macropterus (Wagler): 2 exx.—Timor, [D] leg. J. Gould 1841.

Thinornis novaeseelandiae (Gmelin): 4 ♀♀—S.E. Island, Chatham Islands; coll. W. Hawkins 7.5.1892, 12.5.1892, [T]. ♀—Chatham Islands, coll. W. Hawkins, leg. H. O. Forbes 1898.

Numenius borealis (J. R. Forster): ♂—Picton, Nova Scotia, Canada, coll. McCulloch 3.3.1835, [D]. 2 exx. (mounted)—leg. Cheltenham College Museum 1963. 1 ex. (mounted)—leg. Scarborough Museum 1963 (previously British Armitage collection).

Coenocorypha aucklandica pusilla (Buller): 3 ♂♂, ♀—S.E. Island, Chatham Islands, coll. W. Hawkins, May 1892, [T]. 2 ♀♀—S.E. Island; coll. W. Hawkins May 1892, leg. H. O. Forbes 1898.

Coenocorypha aucklandica huesti (Tristram): type specimen—The Snares, off New Zealand, coll. A. von Hügel 23.11.1874, [T]. This specimen is figured in Sir Walter Buller's "Birds of New Zealand" (2nd Ed.) as *Gallinago pusilla* Buller.

Coenocorypha aucklandica aucklandica (G. R. Gray): 1 ex., juv.—Mount Teviot, Auckland Islands, coll. J. McIvor, Dec. 1874, [T] leg. A. von Hügel.

Himantopus himantopus novaeseelandiae Gould. 1 ex.—New Zealand, coll. 1865, [T] leg. C. J. Langlands. 1 ex.—New Zealand, [D] leg. Stanley 1845.

Himantopus himantopus knudseni Stejneger: ♂—Oahu, Hawaiian Islands, coll. Jan. 1893, [T] leg. S. B. Wilson.

†*Rhinoptilus bitorquatus* (Blyth): 1 ex.—E. India, coll. 1850, [T] leg. T. C. Eyton.

Larus audouinii Payraudeau: 1 ex.—[D] leg. J. Leadbeater 1841. 1 ex.—[D].

Sterna balaenarum (Strickland): ♂—Robben Island, S. Africa, coll. E. L. Layard 22.11.1869, [T]. 1 ex.—Damaraland, S. Africa, coll. C. J. Andersson, [T].

†*Pinguinus impennis* (Linnaeus): osteological material—n.l. 1 egg—[D].

†*Rapbus cucullatus* (Linnaeus): osteological material—leg. H. P. Higginson 1866 and W. Stanley 1867.

†*Rapbus solitarius* (Sélys-Longchamps): osteological material—[T].

Ptilinopus roseicapilla (Leeson): 2 ♂♂—Guam, Marianne Islands, coll. 23.2.1895, 5.7.1895, leg. W. Rothschild 1899.

Drepanoptila holosericea (Temminck): ♂—Moindou, New Caledonia, coll. E. L. Layard 18.10.1881, [T]. ♀—Dombea, New Caledonia, coll. E. L. Layard 13.6.1878, [T].

Ducula whartoni (Sharpe): ♂—Christmas Island, coll. J. J. Lister 1.10.1887, [T].

Ducula goliath (G. R. Gray): ♂—Yahoué, New Caledonia, coll. E. L. Layard 2.10.1880, [T].

Hemiphaga novaeseelandiae chathamensis (Rothschild): ♂—Chatham Islands, coll. W.

Hawkins, May 1892, [T]. 1 ex.—Chatham Islands, coll. W. Hawkins, leg. H. O. Forbes 1898.

Columba trocaz trocaz Heineken: ♀—Madeira, [T] leg. Lilford Aviary (died in 1891). ♂—Madeira, coll. F. D. Godman 26.6.1871, [T]. ♂—Madeira, coll. 26.2.1884.

Columba trocaz bollii Godman: ♂—La Galga, Palma, W. Canaries, coll. H. B. Tristram 20.4.1889, [T]. ♂—Gomera, W. Canaries, coll. H. B. Tristram 12.5.1888, [T]. ♀—laurel forest, St. Ursula (4200 ft), Tenerife, coll. H. B. Tristram 27.4.1888, [T]. ♀—Gomera, coll. E. G. Meade-Waldo 1888, leg. Lilford Aviary (died 1890).

Columba junoniae Hartert: ♂—Palma, W. Canaries, coll. H. B. Tristram 20.3.1890, [T]. ♀—La Galga, Palma, coll. H. B. Tristram 20.4.1889, [T]. ♂—Gomera, W. Canaries, coll. H. B. Tristram 9.5.1888, [T]. ♂, imm.—San Ambrosio, Valli Ermoso, Gomera, coll. H. B. Tristram, May 1888, [T]. ♀—Gomera, coll. H. B. Tristram 9.5.1888, leg. W. H. Barrow 1957.

Columba jowei (Stejneger): 1 ex.—Riu Kiu Islands, Japan, coll. M. Namiye, Jan. 1887, [T].

Nesoenas mayeri (Prévost): 1 ex.—Mauritius, [D].

†*Ectopistes migratoria* (Linnaeus): imm.—Old Soldier's Home, Columbia, coll. E. Coues 14.10.1859, [T] leg. E. Coues. ♂—Nebraska, coll. F. V. Hayden, [T] leg. U.S.N.M. ♂—N. America, [T]. imm.—coll. Dyson, [D] leg. Dyson 1849. imm.—[D] leg. J. Leadbeater 1842. ♂—[D] leg. W. Bullock Museum. ♂, ♀—[D]. ♂—U.S.A., coll. Gough, leg. Rushton 1922. ♂—leg. E. R. Paton 1914. 2 ♂♂ (1 mounted)—leg. Salisbury, South Wilts and Blackmore Museum. 2 ♂♂ (1 mounted), ♀—n.l. 2 eggs—leg. R. Wallace (previously from Jefferys 1904).

Streptopelia picturata rostrata (Bonaparte): 2 exx.—Marianne, Seychelles, coll. H. Warry 1879, [T]. 1 ex.—Cousin Island, Seychelles, coll. H. Warry 1879, [T]. 1 ex.—Seychelles, coll. E. P. Wright 1868, [T] leg. A. Newton.

Claravis godefrida (Temminck): ♀—[D] leg. Tucker 1836. ♂—[D].

Gallicolumba rubescens (Viellot): 2 ♀♀—Marquesas Islands, leg. H. Bright 1927. Imm.—(first bred in Europe) leg. H. Bright 1927. ♂—Nukahiva, Marquesas Islands, leg. H. Bright 1926.

Didunculus strigirostris (Jardine): ♂, 1 ex.—Samoa, coll. 1874, [T] leg. S. J. Whitmee. 1 ex.—Mamnea, Samoa, [T] leg. S. J. Whitmee. 2 ♂♂ (mounted)—Samoa.

Strigops habroptilus G. R. Gray: 1 ex.—New Zealand, coll. W. Fox, [T]. 1 ex.—[T] leg J. H. Gurney. 1 ex. (mounted)—coll. 24.6.1901. 1 ex. (mounted)—leg. Warrington Museum 1976. 1 ex.—Lake Wanaka, South Islands, leg. Hutton. ♀ (mounted)—Lyall Bay. ♂, 2 exx. (mounted)—n.l. 5 exx.—n.l.

†*Nestor productus* (Gould): 1 ex. (previously mounted)—Phillip Island, coll. 1788, [T]: bought by Gov. Phillip in 1788 and then passed to Dr. Leach. The bird was then bought by XIIIth Earl of Derby at Christie's sale of 1811, Tristram subsequently obtaining the specimen by exchange in 1873. 1 ex.—Phillip Island, [D] leg. Tucker 1833. This bird was given to Captain Sturt, probably by John Gould, to bring to England. It has a very long bill with a strongly grooved culmen.

Vini peruwiana (P. L. S. Muller): 1 ex.—Tahiti, [D] leg. J. Leadbeater 1844. 1 ex.—Society Islands, [D] leg. Nightingale. ♂—[D].

Vini ultramarina (Kuhl): 2 exx., imm.—Marquesas Islands, coll. J. L. Green, Mar. 1880, [T]. 1 ex.—Marquesas Islands, [T] leg. E. Verreaux. 1 ex.—[D] leg. T. M. Williams 1847. 1 ex.—Marquesas Islands, [D] leg. B. Isaacson 1845. 1 ex.—[D] leg. J. Leadbeater 1845. 1 ex.—Nukuhiva, Marquesas Islands, [D] leg. J. Gould 1843. 1 ex. (partial albino)—[D] leg. J. Leadbeater.

Anodorhynchus glaucus (Viellot): 1 ex.—Brazil, [D] leg. J. Leadbeater 1835.

†*Ara tricolor* Bechstein: ♀—Mexico, [D] (died in Derby Aviary).

Aratinga guarouba (Gmelin): 1 ex.—Brazil, [D] (died in Derby Aviary 1838). ♀—Cayenne, [D] leg. W. Bullock Museum.

†*Conuropsis carolinensis carolinensis* (Linnaeus): 1 ex.—Danford, Florida, coll. Loud, Mar. 1884, [T] leg. H. K. Coale. 1 ex.—Fort Colt, coll. C. S. McCarthy, [T] leg. U.S.N.M. 1 ex.—[D] (died in Derby Aviary 1812).

Rhynchopsitta pachyrhyncha pachyrhyncha (Swainson): 1 ex.—Mexico, [D] leg. Tucker. 1 ex.—Mexico, [D]. 1 ex.—[D]. 1 ex.—leg. Bootle Museum 1915 (previously from R.I.L.).

Pyrrhura cruentata (Wied): 1 ex.—[D] leg. Warwick 1848. 1 ex.—South America, [D] leg. W. Bullock museum. 1 ex.—leg. Bootle Museum 1915 (previously from R.I.L.).

Touit melanotus (Wied): 1 ex.—near Rio de Janeiro, Brazil, [D] leg. Warwick 1848. 1 ex.—Brazil, [D] leg. Tucker 1831.

Touit surda (Kuhl): ♂—Bahia, Brazil; coll. E. Huster, [T] leg. H. K. Coale. ♂—near

Rio de Janeiro, Brazil, [D] leg. Warwick 1848. ♂—Pernambuco, Brazil, [D]. ♂—leg. Warrington Museum 1976. 2 ♂♂—n.l.

Amazona vittata vittata (Boddaert): 1 ex.—[D] (died in Derby Aviary 1835).

Amazona pretrei (Temminck): 1 ex.—Rio Grande, Brazil, [D] leg. Johnson 1837.

Amazona brasiliensis (Linnaeus): 1 ex.—Brazil, [D].

Amazona guildingii (Vigors): **syntype**—St. Vincent Island, coll. L. Guilding 1826, [T] leg T. C. Eyton 1881 (previously from Z.S.M. 1826). 1 ex.—St. Vincent Island, [D] leg Tucker. 1 ex.—St. Vincent Island, leg. Norwich Castle Museum (previously from A. Extra).

Amazona imperialis Richmond: 1 ex.—[D]. ♀—Island of Dominica, Lesser Antilles, coll. 10.12.1902, leg. W. H. Barrow 1957.

Coracopsis nigra barkelyi E. Newton: 1 ex.—Seychelles, coll. 1880; [T]. 2 exx.—Praslin Island, Seychelles, coll. H. L. Warry 1879, [T].

†*Psittacula eupatria wardi* (E. Newton): imm. ♂—Seychelles, coll. H. L. Warry, June 1881, [T]. ♀—Mahé, Seychelles, coll. H. L. Warry, Mar. 1880, [T].

Psephodus pulcherrimus (Gould): imm. ♂—Oakey Creek, Darling Downs, New South Wales, coll. 13.7.1844, [D] leg. J. Gould 1845. ♂—Condamine River, Darling Downs, coll. 17.5.1844, [D] leg. J. Gould 1845. ♂—New South Wales, [D] leg. Williams 1845.

Neophema chrysogaster (Latham): ♂—Actaeon Islands, Tasmania, [D] leg. J. Gould 1840. ♀—Tasmania, [D] leg. J. Gould 1840. Imm.—Hobart Town, Tasmania, [D] leg. W. Holme 1828. ♂ (mounted)—n.l.

Neophema pulchella (Shaw): 2 ♀♀—Victoria; coll. S. B. Piers, [T]. ♂—New South Wales, [T] leg. R. M. Middleton. ♀—New South Wales, [D] (died in Derby Aviary 1844). ♂—New South Wales, [D] leg. J. Leadbeater 1836. ♂—Hobart, Tasmania, [D] leg. J. Leadbeater 1836. ♀—New South Wales, [D] leg. J. Leadbeater. ♀—New South Wales, leg. R. Wagstaffe (previously Gee collection). ♀—leg. Ismay. ♂ (mounted)—n.l.

Neophema splendida (Gould): ♂, ♀—Swan River, Australia, [D] leg. J. Leadbeater 1846.

Eumyphobus cornutus waeensis (Layard and Layard): **type specimens**: ♂, ♀—Uvea, Loyalty Islands, coll. E. L. Layard 25.7.1880, [T]. Imm.—n.l.

Cyanoramphus novaezelandiae cookii (G. R. Gray): ♂—Norfolk Island, coll. W. Crowfoot 1886, [T] leg. P. H. Metcalfe. 1 ex.—[D]. This bird is the type of *C. magnirostris* Forbes and Robinson, formerly considered to be a synonym of *C. zealandicus* (Latham) (see Sims 1953).

†*Cyanoramphus zealandicus* (Latham): ♀—Tahiti, [D] leg. J. Leadbeater 1845. ♂—Tahiti, [D] leg. J. Banks (previously from W. Bullock Museum).

Cyanoramphus auriceps forbesi Rothschild: 1 ex.—Chatham Islands, leg. W. Rothschild 1927 (previously Palmer collection).

Cyanoramphus malherbi Souancé: 1 ex.—South Island, New Zealand, coll. P. Seymour 1891, [T]. ♀—Port Cooper, coll. F. Strange, [D] leg. J. Gould 1850. 1 ex.—n.l.

Pezoporus wallicus flaviventris North: 1 ex.—South Australia, coll. Peele; [T]. 1 ex.—Australia, [D].

Pezoporus wallicus wallicus (Kerr): 1 ex.—Australia, coll. W. Hornby 17.5.1847, [D]. 3 exx.—Australia, [D]. 1 ex.—leg. J. Ismay. 2 exx. (1 mounted)—n.l.

Geopsittacus occidentalis Gould: 1 ex.—Australia, [D] leg. Sturt (previously from J. Gould 1847).

Phaenicophaeus pyrrhocephalus (Pennant): 1 ex.—Ceylon, [T]. 1 ex.—[D]. 1 ex. (mounted)—n.l.

†*Coua delalandei* (Temminck): 1 ex.—Malagasy, [D]. (See Morgan 1975.)

Otus insularis (Tristram): **type specimen**—Mahé, Seychelles, coll. H. L. Warry, Apr. 1880, [T].

Ninox novaeselandiae undulata (Latham): 1 ex.—Norfolk Island, coll. P. H. Metcalfe 1888, [T].

Sceloglaux albigula albigula (G. R. Gray): 2 exx.—New Zealand, coll. E. Stanley, [D] leg. E. Stanley. ♀—Otago, South Island, New Zealand, leg. E. Gerrard.

†*Aegotheles savesi* Layard and Layard: **type and unique specimen**: ♂—Tonque, near Noumea, New Caledonia, coll. M. Savés 11.4.1880, [T].

Ramphodon dohrnii (Bourcier and Mulsant): ♂—Rio de Janeiro, Brazil, leg. Taylor collection.

Coeligena prunellei (Bourcier): ♂ (mounted)—[D] leg. Williams 1847. ♂ (mounted)—[D] leg. J. Leadbeater 1842. ♂, ♀—New Granada, Columbia, S. America, coll. J. Nichol 1962, leg. J. Nichol collection. 1 ex. (mounted)—leg. Taylor collection. 1 ex. (mounted)—n.l.

Pharomacrus mocino mocino de la Llave: ♂—Rashé, Vera Paz, Guatemala, coll. O. Salvin, Mar. 1860, [T]. Imm. ♀—[D] leg. J. Leadbeater 1844. 2 ♂♂, ♀—Coban, Vera Paz, coll.

A. de Lattre, June 1843, [D]. 2 ♂♂—[D]. ♂—Guatemala. 4 ♂♂ (2 mounted), ♀ (mounted)—n.l.

Halcyon cinnamomina cinnamomina Swainson: ♂, ♀—Guam, Marianne Islands, coll. W. Rothschild 29.1.1895 (♂), 4.2.1895 (♀), leg. W. Rothschild 1899.

Brachypteracias leptosomus (Lesson): ♂—interior of Malagasy, coll. A. Majastre 24.4.1881, [T]. 1 ex.—Malagasy, coll. W. D. Cowan, [T].

Brachypteracias squamigera Lafresnaye: ♀—Mointenbato, Malagasy, coll. Audebert 5.5.1878, [T] leg. Leiden Museum. 1 ex.—Malagasy, coll. W. D. Cowan, [T].

Atelornis pittoides (Lafresnaye): 1 ex.—Ankafana, South Betsileo, Malagasy, coll. W. D. Cowan, Mar. 1881, [T]. 1 ex.—Malagasy, coll. Crossley, [T].

Atelornis crossleyi Sharpe: 1 ex.—Malagasy, [T] leg. E. Gerrard.

Rhinoplax vigil (J. R. Forster): 1 ex. (mounted)—Malay Peninsula, coll. Glasspoole, leg. Norwich Museum. 1 ex. (mounted)—North British Borneo.

Dryocopus javensis richardsi Tristram: type specimen: ♀—Tsu-Shima Island, Japan, coll. G. E. Richards 24.8.1875, [T].

Dendrocopos borealis borealis (Vieillot): ♂—Rosewood, Florida, U.S.A., coll. G. W. Chamberlain 18.11.1883, [T] leg. H. K. Coale. ♂—North America, coll. J. G. Bell 30.8.1847, [T] leg. U.S.N.M. ♂, ♀—[D] leg. W. Bullock Museum 1811. ♂—U.S.A., [D].

Campephilus principalis principalis (Linnaeus): ♂—Louisiana, [T] leg. U.S.N.M. ♀—Texas, coll. Drummond, Feb. 1835, [D]. 2 ♂♂, 2 ♀♀—[D].

Campephilus imperialis (Gould): ♂, ♀—Mexico, [D] leg. J. Gould.

Passerines

Myrmotherula erythronotus (Hartlaub): ♂—South America, [D] leg. J. Gould 1831. ♀—[D] leg. Tucker 1831.

Pyriglena atra (Swainson): ♂—[D] leg. Johnson 1833.

Calyptura cristata (Vieillot): 1 ex.—[D] leg. J. Warwick 1849. 1 ex.—[D]. 1 ex.—n.l.

Cotinga maculata (Müller): imm. ♂—Brazil, [D] leg. Rumford 1835. ♂—leg. Bootle Museum 1915 (previously from R.I.L.). ♂ (mounted)—leg. Connell. ♂—n.l.

Cephalopterus penduliger Sclater: 1 ex.—[D] leg. W. Hooker 1843.

Pitta gurneyi Hume: ♂—Bankasoon, Burma, coll. W. Davison 16.4.1877, [T].

Xenicus longipes longipes (Gmelin): ♂, ♀—Karama Ranges, South Island, New Zealand, coll. 1895, leg. H. B. Tristram 1898. ♀—New Zealand, [T].

Xenicus longipes stokesii Gray: ♂—Taupo, North Island, New Zealand, coll. J. von Haast, Aug. 1866, [T].

†*Xenicus lyalli* (Rothschild): 1 ex. (formerly spirit specimen)—Stephens Island, New Zealand, leg. H. B. Tristram 1898.

Neodrepanis hypoxanthus Salomonsen: ♂—east of Tananarive, Malagasy, coll. W. D. Cowan, July 1881, [T].

Coracina typica (Hartlaub): ♂, ♀—Mauritius, coll. E. Newton, Nov. 1866, [T].

Hypsipetes borbonicus borbonicus (J. R. Forster): ♀—Reunion, coll. H. H. Slater 1875, [T].

Hypsipetes borbonicus olivaceus Jardine and Selby: ♂—Mauritius, coll. H. H. Slater 1874, [T]. 1 ex.—Mauritius, [T] leg. T. C. Eyton.

Xenopirostris polleni (Schlegel): ♂, ♀—Malagasy, coll. J. Wills 1893, [T]. ♂—Malagasy, coll. Grandidier, [T] leg. Leiden Museum.

Oriolia bernieri Geoffroy: ♂, imm. ♂—Savary, Malagasy, coll. Audebert 16.3.1878 and 17.11.1877 (imm), [T] leg. Leiden Museum.

Troglodytes troglodytes hirtensis Seebohm: ♀, 1 ex. (formerly spirit specimens)—St. Kilda, Outer Hebrides, Scotland, leg. A. G. Ferguson 1905.

Troglodytes aedon mesoleucus (Sclater): 2 ♂♂—Fonds St. Jacques, St. Lucia, coll. G. A. Ramage, Apr. 1889, [T].

Nesomimus trifasciatus trifasciatus (Gould): ♂, ♀—Gardner Island, Galapagos Group, coll. Drowne (♂), Hull (♀) 31.10.1897, leg. W. Rothschild 1899.

Ramphocinclus brachyurus sanctaeluciae Cory: ♂, ♀—Fonds St. Jacques, St. Lucia, coll. G. A. Ramage 26.3.1889 (♂), 1.4.1889 (♀), [T].

Copsychus sechellarum Newton: 4 ex.—Marianne, Seychelles, coll. H. L. Warry 1879, [T].

Cichlherminia lherminieri sanctaeluciae (Sclater): ♂—Fonds St. Jacques, St. Lucia, coll. G. A. Ramage 23.3.1889, [T].

Phaenornis palmeri Rothschild: ♂—Kauai Island, Hawaiian Islands, coll. S. B. Wilson, Sep. 1888, [T].

Turdus poliocephalus pritzbueri Layard: neotype: imm. ♂—Lifu Island, Loyalty Islands, coll. C. L. Layard 10.1.1878, [T] (see Wagstaffe 1978). 4 ♂♂, 2 ♀♀—Kepeneku, Lifu Island, coll. E. L. Layard, Aug. 1878, [T].

Turdus poliocephalus marensis Layard and Tristram: **type specimen**: ♂—Maré Island, Loyalty Islands, coll. E. L. Layard 22.5.1879, [T]. 3 ♂♂, ♀—Maré Island, coll. E. L. Layard, Oct. 1879 (♀), Oct. and Nov. 1881, June 1882, [T].

Turdus poliocephalus poliocephalus Latham: imm. (with attached sternum)—Norfolk Island, coll. W. M. Crowfoot 1887, [T]. ♂—Norfolk Island, coll. E. L. Layard, Oct. 1879 [T]. ♂, ♀—Norfolk Island, coll. J. H. Brenchley June 1865, [T] leg. Tweeddale Collection. 1 ex.—[D] leg. J. Leadbeater 1836. ♂—Norfolk Island, leg. Norwich Museum 1941.

Paradoxornis heudei David: ♂—Nanking, China, coll. F. W. Stryan, Feb. 1890, [T]. ♀—Nanking, coll. Heude, Dec. 1872, [T].

Picabartes gymnocephalus (Temminck): imm.—Gabon, coll. Ussher, [T] leg. J. H. Gurney.

† *Gerygone igata insularis* Ramsay: 1 ex.—Lord Howe Island, coll. Saunders 1888, [T].

Petroica traversi (Buller): ♂, ♀—Little Mangare, Chatham Islands, coll. W. Hawkins 1892, [T].

Terpsiphone corvina (E. Newton): 3 ♂♂, imm. ♂, ♀—Ladigur, Seychelles, coll. H. L. Warry 1879, [T]. ♂, ♀—Seychelles, coll. 1880, [T]. ♂, ♀—[T].

Terpsiphone bourbonnensis desolata Salomonsen: ♂—Mauritius, coll. H. H. Slater 1875, [T]. ♀—Mauritius, [T] leg. A. C. Smith. ♂—Mauritius, [T] leg. E. Newton.

Pomarea mendozae (Hartlaub): imm.—Marquesas Islands, coll. J. Green, Mar. 1880, [T].

Metabolus rugensis (Hombron and Jacquinot): 4 ♂♂ (black and white plumage)—Truk Island, Caroline Islands, coll. T. Kubary 1878 (one in June), [T] leg. Museum Godeffroy, Hamburg. ♂ (cinnamon and white plumage)—Truk Island, coll. T. Kubary, June 1878, [T] leg. Museum Godeffroy.

Turnagra capensis tanagra (Schlegel): ♀—North Island, New Zealand, coll. F. Strange, [D] leg. J. Gould 1850.

Turnagra capensis (Sparrrman): ♂, ♀—Tiopo, South Island, New Zealand, coll. J. von Haast, Sep. 1873, [T]. 1 ex.—South Island, coll. Lyall, [T]. Imm.—South Island, [T] leg. Eyton Museum. ♀—Port Cooper, coll. F. Strange, [D] leg. J. Gould 1850. ♂—[D] leg. J. Gould 1850. 2 ex.—[D] leg. E. Stanley 1845. ♂—[D] leg. I. E. Warwick 1845. 1 ex.—[D] leg. J. Leadbeater 1841. ♂, ♀—Stephens Island, New Zealand, leg. W. Buller 1901.

Anthreptes pallidigaster Sclater and Moreau: ♂, ♀—Amani (3000 ft), Eastern Usambara Mts., Tanzania, coll. J. G. Williams 23.9.1960, leg. J. G. Williams 1966.

Meliphaga cassidix (Gould)*: ♀—Gaskell, Melbourne, Victoria, coll. E. P. Ramsay, Jan. 1873, [T]. ♂—Western Port Bay, Port Philip Heads, Victoria, coll. S. B. Piers, [T]. ♀—Victoria, coll. S. B. Piers, [T].

Notiomystis cincta cincta (Du Bus): ♀—New Zealand, coll. Lyall 1850, [T]. ♂—New Zealand, [T]. ♂, ♀—New Zealand.

Mobo braccatus (Cassin): ♂, ♀—Kauai, Hawaiian Islands, coll. Sep. 1888, [T] leg. S. B. Wilson.

† *Mobo nobilis* (Merrem): ♂—Kaawaloa, Hawaii, coll. S. B. Wilson 26.5.1887, [T]. 1 ex.—Hawaiian Islands, [D] leg. Brooke 1830. 1 ex.—Hawaiian Islands, possibly coll. J. Cook, [D] leg. W. Bullock Museum. 2 ex.—Hawaii, leg. H. H. Jones 1878.

† *Anthornis melanura melanocephala* Gray: ♂, ♀—Chatham Islands, coll. W. Hawkins 1895, [T]. 2 ♂♂—Chatham Islands, coll. Lyall, [T].

Leucopoea semperi Sclater: ♀, 1 ex.—Fonds St. Jacques, St. Lucia, coll. G. A. Ramage 5.4.1889, [T].

Palmeria dolei (Wilson): imm. ♂—Haleakala, (5000 ft.), Maui, Hawaiian Islands, coll. R. C. L. Perkins, May 1896, leg. R.S.B.A. 1900. ♂—Molokai (4–5000 ft.), Hawaiian Islands, coll. R. C. L. Perkins 9.7.1893, leg. R.S.B.A. 1900.

Hemignathus obscurus procerus Cabanis: ♂, ♀—Kauai, Hawaiian Islands, coll. S. B. Wilson. Sep. 1888, [T]. ♂, ♀—Kaholuamano, Kauai, coll. R. C. L. Perkins Oct. 1895, leg. R.S.B.A. 1900.

† *Hemignathus obscurus obscurus* (Gmelin): ♀—Hawaiian Islands, coll. J. K. Townsend, [D] leg. J. J. Audobon, June 1838. ♀—above Amaulu (2000 ft.), Hilo, Hawaii, coll. R. C. L. Perkins, Dec. 1895, leg. R.S.B.A. 1900.

Hemignathus lucidus hanapepe Wilson: ♂—Kauai, Hawaiian Islands, coll. S. B. Wilson, Sep. 1888, [T]. 1 ex.—[D] leg. J. Leadbeater 1846. 1 ex.—Kauai, [D].

Hemignathus lucidus affinis Rothschild: imm. ♂—Haleakala, Maui, Hawaiian Islands, coll. R. C. L. Perkins, Oct. 1896, leg. R.S.B.A. 1900.

Hemignathus wilsoni Rothschild: ♂—Mana, Hawaii, coll. S. B. Wilson, Mar. 1888, [T]. Imm. ♂—Kau, Hawaii, coll. R. C. L. Perkins, June 1895, leg. R.S.B.A. 1900.

*Zosteropidae: Merseyside County Museums once held a large number of specimens, including several types. They are now missing and it is feared they were destroyed when the museum was bombed during the Second World War.

Loxops coccinea coccinea (Gmelin): ♂—Hilo, Hawaii, coll. C. J. Wetmore May 1875, [T]. ♂, imm. ♀—Kau, Hawaii, coll. R. C. L. Perkins June 1895, leg. R.S.B.A. 1900.

Loxops coccinea ochracea Rothschild: ♂—Haleakala, Maui, Hawaiian Islands, coll. R. C. L. Perkins, May 1896, leg. R.S.B.A. 1900.

†*Loxops coccinea rufa* (Bloxam): ♂—Oahu, Hawaiian Islands, coll. J. K. Townsend, [D] leg. J. J. Audobon, 1838.

Paroreomyza maculata bairdi (Stejneger): ♀—Kauai, Hawaiian Islands, coll. S. B. Wilson, Sep. 1888, [T].

Paroreomyza maculata flammea (Wilson): ♂, ♀, imm.—Molokai, Hawaiian Islands, coll. R. C. L. Perkins, May 1893 (♀), 18.6.1893 (♂), 25.6.1893 (imm.), leg. R.S.B.A. 1900. [Possibly extinct].

Paroreomyza maculata montana (Wilson): ♂—Lanai, Hawaiian Islands [possibly extinct], coll. R. C. L. Perkins, Jan. 1894, leg. R.S.B.A. 1900.

Psittirostra psittacea (Gmelin): ♂—Kaawaloa, Hawaiian Islands, coll. S. B. Wilson 31.5.1887, [T]. ♀—Hawaiian Islands, [T] leg. Jardine Museum 1886. **Type specimens:** ♂, ♀—Hawaiian Islands, [D] leg. Leverian Museum 1806. ♀—Hawaiian Islands, [D] leg. J. Leadbeater 1849.

†*Loxioides palmeri* (Rothschild): ♀—Hawaii, coll. S. B. Wilson, Jan 1893, [T].

Loxioides bailleui (Oustalet): ♂—Hawaii, coll. S. B. Wilson 14.6.1887, [T].

†*Loxioides kona* (Wilson): ♀—Mauna Loa (4000 ft.), Kona district, Hawaii, coll. R. C. L. Perkins, Sep. 1892, leg. R.S.B.A. 1900.

Agelaius xanthomus xanthomus (Sclater): ♂—N. Puerto Rico, coll. R. Swift, [T] leg. U.S.N.M. 1 ex.—[D] leg. Bridges 1842.

†*Quiscalus palustris* (Swainson): ♂—Rio Lerma, Mexico, leg. Bootle Museum 1915 (previously R.I.L.).

Carduelis cucullata Swainson: ♂—Otinoco, Venezuela, coll. H. K. Coale, [T]. ♀—South America, coll. H. K. Coale, [T]. ♂—“Spanish Main”, [D] (died in Derby Aviary 1846).

Foudia sechellarum Newton: ♂, ♀—Seychelles, coll. H. L. Warry, June 1882, [T]. 2 ♀♀—Marianne, Seychelles, coll. H. L. Warry 1879, [T].

Foudia flavicans Newton: ♂—Rodriguez Island, coll. J. B. Balfour, [T].

†*Aplonis fusca bulliana* Mathews: 3 exx.—Lord Howe Island, coll. E. Saunders 1888, [T].
†*Necropsar leguati* Forbes: **type and unique specimen**—“Madagascar” (but perhaps from Met Island, off Rodriguez, *vide* Peters *et al.* 1962 (15)), [D] leg. M. Verreaux 1850.

Callaas cinerea wilsoni (Bonaparte): 1 ex.—Wellington, North Island, New Zealand, coll. W. Buller, June 1873, [T]. 1 ex.—North Island, coll. F. Burton, [T]. 1 ex.—coll. M. McDornie, [D].

Callaas cinerea cinerea (Gmelin): 2 exx.—South Island, New Zealand, [T]. **Type specimen**—Queen Charlotte Sound, coll. J. Cook, [D] leg. Leverian Museum 1806. 1 ex.—[D] leg. E. Stanley 1849. 1 ex.—[D] leg. E. Stanley 1845. 1 ex.—[D] leg. Warwick 1845. 2 exx.—[D]. 2 exx. (mounted)—n.l.

Creadion carunculatus carunculatus (Gmelin): imm. (mounted)—n.l.

†*Heteralocha acutirostris* (Gould): ♂ (mounted)—n.l.

Artamus leucorhynchus pelewensis Finsch: ♀—Palau Islands, coll. T. Kubary, [T] leg. Museum Godeffroy, Hamburg.

Corvus picus Kerr: ♀—Kona, Hawaii, coll. S. B. Wilson, Mar. 1888, [T].

Acknowledgements: I am grateful to Dr. M. J. Lagen (Keeper of Vertebrate Zoology, Merseyside County Museums) for his extensive advice during the preparation of this paper. I would also like to acknowledge a considerable debt to Mr. P. J. Morgan (National Museum of Wales) and Mr. R. Wagstaffe for the benefit of their unpublished research on the Liverpool collections and to others who have given advice and assistance, including C. W. Benson, W. R. P. Bourne, J. M. Forshaw, D. T. Holyoak, W. B. King, G. Y. McInnes, D. G. Medway, P. Paton and the staff of the Subdepartment of Ornithology, British Museum (Natural History).

References:

- Fisher, J., Simon, N. & Vincent, J. 1969. *The Red Book (Wildlife in Danger)*. I.U.C.N. and Collins: London.
Forbes, H. O. 1901. Note on a species of Bittern (*Zebriulus pumilus*) from South America. *Bull. Liv. Mus.* 3(2): 61, pls. 1–2.
Greenway, J. C. 1967. *Extinct and Vanishing Birds of the World*. 2nd Ed. Dover Publications: New York.
King, W. B. 1978–1979. *I.U.C.N. Red Data book*. Vol. 2 (Aves). I.U.C.N., Morges, Switzerland.

- Morgan, P. J. 1975. A catalogued specimen of *Cona delalandei* (Temminck) (Cuculidae) in Merseyside County Museums, Liverpool. *Bull. Brit. Orn. Cl.* 95(2): 663-4.
- Morony, J. J., Bock, W. J. & Farrand, J. 1975. *Reference List of the Birds of the World*. American Museum of Natural History: New York.
- Peters, J. L. 1931-1970. *Check List of Birds of the World*. Vols. 1-15. Museum of Comparative Zoology, Cambridge, Mass.
- Sims, R. W. 1953. On the status of *Cyanorhamphus magnirostris* (Forbes and Robinson). *Bull. Brit. Orn. Cl.* 73(9): 104-105.
- Tristram, H. B. 1882. Ornithological notes of a journey through Syria, Mesopotamia and Southern Armenia in 1881. *Ibis* (4)6: 415-416.
- Wagstaffe, R. 1978. *Type specimens of Birds in the Merseyside County Museums*. Merseyside County Museums: Liverpool.

Address: Clem Fisher, Dept. Vertebrate Zoology, Merseyside County Museums, William Brown Street, Liverpool L3 8EN.

© British Ornithologists' Club 1981.

Preliminary review of the Clay-coloured Robin *Turdus grayi* with redesignation of the type locality of the nominate form and description of a new subspecies

by R. W. Dickerman

Received 28 July 1980

In attempting to identify the races of specimens of *Turdus grayi* collected on the Pacific lowlands and in the Motagua River Valley of Guatemala during the course of studies of mosquito transmitted viruses, it became necessary to re-evaluate the geographic variation throughout the range of the species. Such a major revision was not possible with the currently available material due to the paucity of specimens in unworn plumage and also in part due to post-mortem colour changes. However, it seems important to clarify the status of the nominate population, since the designation of the type locality by Griscom (1930) appears erroneous. Because of the resultant recognition of the characters of the true nominate population, it also becomes necessary to rename the widely distributed race that has long been considered to be *Turdus grayi grayi*.

The species was described by Bonaparte (1837) from a collection of birds obtained during a "fortnight's scientific tour" in Guatemala by Col. Velazquez de Leon. The location of the species type is unknown.

Hellmayr (1938) wrote that the type was in the Lord Derby Collection, which went to the Liverpool Museum. Wagstaffe (1978) did not include it in the list of the types of the Merseyside County Museums (=Liverpool Museum), and M. J. Largen, current Keeper of Zoology kindly confirmed by letter that the Velazquez types were not in that collection. They apparently never were in the Derby Collection. The confusion may have arisen because Bonaparte presented reports on 3 collections at the same meeting of the Zoological Society of London. The third was on a collection by Leadbeater and the statement is made (Bonaparte 1838: 119) that birds from Leadbeater were to be part of the Derby Collection.

Velazquez apparently landed at Ystapa (=Ixtapa), the only Pacific port then in use (San Jose was not established until 1853 — Squier 1858) and probably travelled via Naranja and Escuintla to Palin, and thence either through

Antigua or Lago Atitlan to Guatemala City.* All the species he obtained occur along this route, *contra* Griscom (1930: 6) who erroneously thought "*Pachysylvia* (= *Hylophylus*) *decurtata*" was restricted to the Caribbean rain forest (see also Phillips 1966). Further, Griscom, in justification of his designation of the Department of Alta Vera Paz, Guatemala as the type locality of Bonaparte's *Turdus grayi*, wrote (1930: 6) "It is apparent that Col. Velasquez must have bought a collection of the trade-skins of the day . . .". Yet in recounting the history of Guatemalan ornithology (Griscom 1932: 4), he cited Bonaparte's 1837 paper as the earliest record of ornithological collecting in Guatemala and stated that it was from 1842 onwards that collectors began visiting the country and training Indian hunters in making trade skins. The type of *Turdus grayi* was without doubt taken along the highway from Ixtapa to Guatemala City. Griscom (1930: 6) wrote "Post-mortem color change in this species is so pronounced that specimens taken prior to 1900 are usually worthless for subspecific comparison. It consequently makes *little or no difference whether the type still exists or not*" (italics mine). This is true where subtle colours, especially olive and grey, are involved, but is less true in the case of deeply coloured forms.

Although the Port of San Jose was not in use in the 1830's, the road from Ystapa passed nearby and there are specimens of "*umbrinus*" from San Jose. Van Tyne & Trautman (1941) restricted Bonaparte's *Scolopacinus rufiventris* to San Jose. I therefore designate San Jose as the type locality of *Turdus grayi* Bonaparte.

With this identification of the nominate form, the following subspecies of *T. grayi* may be recognized from Central America in this preliminary review. These are arranged geographically north to south.

Turdus grayi tamaulipensis

Turdus grayi tamaulipensis Nelson, *Auk* vol. 14, p. 75, 1897; type locality Ciudad Victoria, Tamaulipas, Mexico.

Diagnosis: Ventrally this and *microrhynchus* are the palest of the known subspecies; their bellies are creamy or pinkish-buff, the flanks and breast are buffy. Dorsally, *tamaulipensis* (collected 1941), *microrhynchus* (1958), *linnaei* (1964), and *megas* from Guatemala (1969) are inseparable.

Range: Central Nuevo Leon and southern Tamaulipas and northern Veracruz inland to southeastern San Luis Potosi, and the arid northern part of the Yucatan in Campeche, Yucatan and Quintana Roo, extending south to at least northern Belize.

Discussion: At present the population of the Yucatan Peninsula is designated *tamaulipensis*, although it is disjunct from the remaining range of that form by several hundred kilometers, with the very dark form *lanyoni* (*subsp. nov.* described below) occupying the intervening region. There is insufficient useful material from the Yucatan to evaluate its relationship to genuine *tamaulipensis* or to *megas* of Guatemala, which is in closer geographic proximity.

Turdus grayi microrhynchus

Turdus grayi microrhynchus Lowery and Newman, *Occ. Pap. Louisiana State University Museum of Zoology* no. 22, p. 5-8, 1949; type locality Santa Maria del Rio, central-southern San Luis Potosi, Mexico.

*Route determined from road map of the Department of Guatemala published in "Atlas Guatemalteco en ocho cartas", Formadas y grabadas en Guatemala, 1832.

Diagnosis: Similar in colour to *tamaulipensis* but bill decidedly smaller and shorter.

Range: Known only from the vicinity of the type locality.

Discussion: This form was based on 4 males and 2 females. I have seen 2 additional specimens and those indeed do have small bills. The extent of the range of this form has yet to be determined.

***Turdus grayi lanyoni* subsp. nov.**

Type: Adult male no. 824182, American Museum of Natural History, collected in the [San Andres] Tuxtla Mountains, 0.5 km west of Cerro Balzapote, Veracruz, Mexico on 8 November 1974 by Mario A. Ramos, prepared by Richard J. Oehlenschläger (original field no. "MEX - 5422").

Diagnosis: Darker dorsally and ventrally than *tamaulipensis*, *microrhynchus*, *linnaei*, or *megas*; nearer *grayi* but less deeply ochraceous ventrally, belly much paler, dorsally similar to nominate *grayi*.

Range: Veracruz and Caribbean drainage of Oaxaca (integrates with *linnaei* north of Matias Romero at Sarabia), southeast through Tabasco, across the base of the Yucatan Peninsula into southern Belize south to at least Lago Izabal, Guatemala, and through the humid Caribbean slopes of Chiapas into the tropical northern interior of Guatemala.

Remarks: With Griscom's assignment of the type locality of *grayi* to Alta Vera Paz, the name has been used for all dark populations north (and indeed south) of Guatemala. Because of the ecological variation within Alta Vera Paz, moderately typical examples of 2 or even 3 forms could probably be found there (i.e. *grayi*, *lanyoni*, and perhaps *megas*). In northern Veracruz, along the Lago Tamiahua (Moctezuma) and in adjacent Puebla (Rancho Ajengibre, Tuxpan Road) *lanyoni* integrates with *tamaulipensis*. The detailed zones of intergradation with the adjacent southern subspecies have yet to be determined.

Turdus grayi linnaei

Turdus grayi linnaei Phillips 1966, *Bull. Brit. Orn. Cl.* vol. 86, pp. 127-128; type locality Las Delicias, Chiapas, Mexico.

Diagnosis: Ventrally similar to *tamaulipensis* but with belly, undertail coverts and throat slightly deeper in colour, more ochraceous, rather than creamy-buff; breast slightly darker and greyer. Slightly paler ventrally with somewhat greyer flanks than *megas* from Guatemala.

Range: More xeric habitats of Pacific Oaxaca and adjacent lowlands of Chiapas, extending south in the interior of Chiapas to at least the Guatemala border. Extent of range in Guatemala is unknown.

Remarks: This is a weak race and was not compared with *megas* in the original description. In a detailed revision, *linnaei* may not be separable from the normal variation within *megas*, although at present the range appears to be separated by the dark forms *grayi* and *lanyoni*.

***Turdus grayi grayi* Bonaparte**

Turdus grayi Bonaparte. *Proc. Zool. Soc. London* 1838, p. 116; type locality by above redesignation San Jose, Dept. Escuintla, Guatemala.

Turdus grayi umbrinus Griscom. *Amer. Mus. Nat. Hist. Novit.* no. 438, pp. 5-6, 1930; type locality Finca El Cipris, near Mazatenango, Pacific lowlands of northwestern Guatemala.

Diagnosis: Darker and browner dorsally, similar to *lanyoni*; ventrally the most deeply ochraceous of all the subspecies.

Range: Northwestern Guatemala, apparently extending north in the humid habitats of the mountains of southern Chiapas to Mapastepec. In Guatemala intergrades towards *megas* at San Jose and Panajachel.

Discussion: Of the 21 specimens labelled "*umbrinus*" by Griscom in the AMNH collection, only 6 are in unworn plumage of use for comparisons. Eight juveniles are more richly coloured than a juvenile *lanyoni* and much more so than 3 juveniles of *megas* as defined below. Monroe (1968) could not distinguish "*umbrinus*", as individuals of the "dark type" occur at random in Honduras; moreover, the latter are likely to be intergrades with *lanyoni*, which may extend southward across the humid lower Montagua Valley. Actually, the range of *grayi* is separated from the dark Honduran birds by the Guatemalan portion of the range of *megas*.

Turdus grayi megas

Turdus grayi megas Miller & Griscom 1925. *Amer. Mus. Nat. Hist. Novit.* no. 138, pp. 3-4; type locality Matagalpa, Nicaragua.

Diagnosis: Paler throughout than *grayi* or *lanyoni*, ventrally slightly darker and buffier than *linnaei*, markedly darker than *tamaulipensis*.

Range: From Pacific lowlands of Guatemala; near San Jose and Motagua River Valley (except the lower portion) south through Central America to Nicaragua.

Discussion: Miller & Griscom (1925) had available 3 specimens from Guatemala which they listed with a question mark as *T. grayi grayi* [i.e. *lanyoni*]. Those specimens, all from the Lawrence collection, lack further data, but probably are *lanyoni*. However, Anthony collected at least one readily identifiable *megas* and probably others, but wear and bleaching is so advanced that it is not worth conjecturing the original colours of some birds, since there are good series available to provide a concept of the range in Guatemala. The one good *megas* available to Griscom was taken at "Puebla" [= near Quiriguá, Motagua Valley] and was originally labelled as *casius*. On the label that name has been mostly erased and a line drawn through it; a question mark has been added, I believe by Griscom, and "*= grayi* Lg" has been added in his handwriting. It is a pale greyish-backed bird that is even greyer than a paratype of *megas*.

Within the extensive range of *megas* as given above there may be distinctive populations that warrant recognition, but this awaits further study (for example the dark specimens from Honduras reported by Monroe 1968). The type and paratypes of *megas* are not separable from specimens from the Pacific lowlands and Motagua Valley of Guatemala collected in 1969, although they do differ, as does *grayi*, from *tamaulipensis* as described by Miller & Griscom.

Turdus grayi casius

Planesticus casius Bonaparte, *Compt. Rend. Acad. Sci. Paris*, vol. 41, p. 657, 1855; type locality, Panama.

Diagnosis: A moderately pale race like *megas* but browner, less greyish; darker than *tamaulipensis*, browner than *linnaei*, much paler and less richly coloured than *lanyoni* or *grayi*.

Range: Costa Rica, Panama, and adjacent Colombia, northwestern Choco on the Gulf of Uraba.

Discussion: The ranges of *megas* and *casius* in Nicaragua have yet to be determined.

Key to Subspecies of *Turdus grayi*

1. Dorsally pale and grey to greyish olive or greyish brown	2
1. Dorsally notably dark and brown	5
2. Culmen short (less than 19 mm)	<i>microrhynchus</i>
2. Culmen larger	3
3. Dorsally greyish brown	<i>casius</i>
3. Dorsally greyish olive	4
4. Flanks and undertail coverts paler	<i>linnaei</i>
4. Flanks and undertail coverts darker	<i>megas</i>
5. Belly ochraceous, breast flanks and undertail coverts deep ochraceous	<i>grayi</i>
5. Belly paler buffy ochraceous, breast, flanks and undertail coverts paler	<i>lanyoni</i>

Acknowledgements: The curators of the James Ford Bell Museum of Natural History, University of Minnesota; the Delaware Museum of Natural History and the Louisiana State University Museum of Zoology are acknowledged for lending me fresh plumaged specimens from their collections. Allan R. Phillips was most helpful and stimulating with his critical aid. Some of the material was collected under permits from the Ministerio de Agricultura de Guatemala while carrying out research supported in part by U.S. Public Health Service Research Grant AI-6248 from National Institute of Allergy and Infectious Diseases and in part by Research Contract DA-49-193-MD-2295 from the U.S. Army Medical Research and Development Command.

References:

- Bonaparte, C. L. J. L. 1837. [Birds collected by Colonel Valasquez de Leon during a fortnight's scientific tour in Guatemala.] *Proc. Zool. Soc. Lond.*: 114-119.
- Griscom, L. 1930. Studies from the Dwight collection of Guatemalan birds. III. *Amer. Mus. Nat. Hist. Novit.* 438: 1-18.
- Griscom, L. 1932. The distribution of bird-life in Guatemala. *Bull. Amer. Mus. Nat. Hist.* 64: 1-439.
- Hellmayr, C. E. 1938. Catalogue of birds of the Americas and adjacent islands. Vol. 2. *Zool. Series, Field Mus. Nat. Hist.* 430, no. 13.
- Miller, W. De W. & Griscom, L. 1925. Notes on Central American birds, with descriptions of new forms. *Amer. Mus. Novit.* 183: 3.
- Monroe, B. L. Jr. 1968. Three new subspecies of birds from Honduras. *Occ. Pap. La. State Univ. Mus. of Zool.* 26: 1-7.
- Phillips, A. R. 1966. Further systematic notes on Mexican birds. *Bull. Brit. Orn. Cl.* 86: 148-159.
- Squier, E. G. 1858. *The States of Central America*. New York: Harper Bros.
- van Tyne, J. & Trautman, M. B. 1941. New birds from Yucatán. *Occ. Pap. Univ. Mich. Mus. Zool.* 439: 1-11.
- Wagstaffe, R. 1978. *Type specimens of Birds in the Merseyside County Museums* (formerly City of Liverpool Museums). Liverpool: Merseyside County Museums.
- Address:** Dr. R. W. Dickerman, Dept. of Microbiology, Cornell University Medical College, 1300 York Avenue, New York, N.Y. 10021, U.S.A.

© British Ornithologists' Club 1981.

A newly described species of *Melignomon* (Indicatoridae) from Liberia, West Africa

by P. R. Colston

Received 7 October 1980

This is the second publication (see Forbes-Watson 1970) on the ornithological results of the survey initiated by the IUCN Nimba Research Committee on the ecology of the Nimba area in Liberia, West Africa.

Eleven specimens of a new honeyguide* were collected by A. D. Forbes-Watson and other members of the Nimba Research Laboratory between 1965 and 1974. They form part of a large collection of skins presented to the B.M.N.H. by the IUCN which are the subject of a major report (Colston, in press). Their measurements are given in Table 1.

TABLE 1
Measurements of *M. eisenrauti* and *M. zenkeri* (mm and gm).

<i>M. eisenrauti</i> (6 ♂♂, 5 ♀♀)				<i>M. zenkeri</i> (2 ♂♂, 3 ♀♀)			
wing	♂♂	79-86	(mean 83.2)	wing	♂♂	79-81	(mean 80)
tail	♂♂	47-52	(49.8)	tail	♂♂	45-50	(49)
bill	♂♂	12-13	(12.8)	bill	♂♂	12	(12)
tarsus	♂♂	15-17	(16)	tarsus	♂♂	15-16	(15.5)
weight	♂♂	21-29	(25.5)				
wing	♀♀	78-82	(mean 80.6)	wing	♀♀	72-75	(mean 73.3)
tail	♀♀	46-50	(47.4)	tail	♀♀	45-46	(45.7)
bill	♀♀	12-13	(12.4)	bill	♀♀	12	(12)
tarsus	♀♀	15-17	(15.8)	tarsus	♀♀	14-16	(15)
weight	♀♀	18-24.9	(22.4)				

Description. Similar to *M. zenkeri* but larger (see Table 1) and with brighter more olive-yellow upperparts, much paler, greyer underparts, and considerably more white on the outer tail feathers, which are also broader and less graduated in length. The head is olive-green, merging into a brighter olive-yellow on the back and rump (dusky olivaceous, merging into olive-brown on the back in *zenkeri*); the wings are washed with brighter yellowish-green (olive-brown with duller green edgings in *zenkeri*); and the underparts are pale grey with a faint green wash across the upper breast, becoming whiter towards the lower belly and undertail coverts (olive brown and paler on the belly in *zenkeri*). The primaries and 2 central pairs of tail feathers are black (brownish in *zenkeri*), and the underwing coverts are pale greyish-white (olivaceous-yellow in *zenkeri*). The bill is small and pointed as in *zenkeri*, but is distinctly paler, yellowish-brown (blackish in *zenkeri*). The legs are pale yellow (dull greenish-yellow in *zenkeri*). *M. eisenrauti* is a much brighter bird above but greyer below than *zenkeri*.

Annual Cycle (from collectors' labels and skins). None of the birds was considered to be in breeding condition. Sep and Nov ♂♂ were slightly worn and June and Aug ♂♂ were in fresh plumage. An Oct ♀ was in worn condition and the remaining ♀♀ were mostly in fresh plumage.

Food. Recorded as insects, yellow wax (or pollen?), small fruits and some seeds.

Differences between young M. eisenrauti and M. zenkeri. In addition to the 11 specimens from Mt. Nimba, there is a single specimen in the B.M.N.H. collection from Cameroun. It was collected by Dr. W. Serle in secondary forest at Bakebe and previously thought by Serle to be an immature specimen of *M. zenkeri* (Serle 1959: 65). The bird is a ♂ in fresh plumage and does not

*A copy of this paper, proposing a new name, was sent to Dr. M. Louette in October 1980, shortly after it had been submitted for publication. Dr. Louette has since seen fit to describe the new honeyguide without informing us of his intention (Louette 1981, a new species of honeyguide from West Africa, *Rev. Zool. Afr.* 95: 131-135—*Melignomon eisenrauti*). His paper came to hand while this one was in proof and it has been possible to do little more than delete the proposed name and substitute *eisenrauti* for it in the text and table.

appear to differ significantly from Nimba adult specimens of *eisentrauti*. Its gonads were recorded as small. The skull was partially pneumatized and it was probably a bird of the year. Its legs were noted as orange-yellow. The bill was also orange-yellow with some brownish areas. The wing measures 76 mm, tail 45 mm and bill 12 mm.

Six B.M.N.H. specimens of *zenkeri* include a juv ♂ recently fledged, collected by G. L. Bates on 22 March 1906 at Bitye on the River Ja in the Camerouns (B.M.N.H. No. 1911.5.31.137). Its bill was only partially formed and the tail half grown. The plumage is dark greenish above and considerably duskier greyish-green below. Serle remarks that he examined the short series of adult *zenkeri* obtained by Bates now in the B.M.N.H. However, he failed to note the significance of the juvenile in that collection. Had he done so he would have realised that his own much brighter yellow-green (? imm) specimen from Cameroun did not fit the plumage sequence of *zenkeri*. The tail pattern of the juv *zenkeri* is identical to that of the adult and quite different from that of *eisentrauti*. Dr. Serle himself remarked on this difference: "The amount of white on the four outer pairs of rectrices is much greater. The outermost pair are white tipped light brown, the brown tip extending 15 mm along the outer web and 4 mm along the inner web; the next pair are white narrowly edged with brown to 12 mm from the tip along the outer web only; the next pair are entirely white".

Remarks. The genus *Melignomon* was long thought to consist of a single species, *M. zenkeri*. With the discovery of *eisentrauti*, a species apparently endemic to the Upper Guinea forest, and as far as is known, *allopatriic* with *zenkeri* (see Snow (1978), map 374), it seems probable that the genus consists of 2 species in a single super-species. *M. zenkeri* is found from the southern Camerouns to the northern part of the Congo forest east to Semliki. It seems likely *eisentrauti* will be found in other areas of the Upper Guinea forest.

References:

- Forbes-Watson, A. D. 1970. A new species of *Melaenornis* (Muscicapinae) from Liberia. *Bull. Brit. Orn. Cl.* 90: 145-148.
 Serle, W. 1959. Note on the immature plumage of the Honey-guide *Melignomon zenkeri* Reichenow. *Bull. Brit. Orn. Cl.* 79: 65.
 Snow, D. W. (Ed.) 1978. *An Atlas of Speciation in African Non-passerine Birds*. Brit. Mus. Nat. Hist.: London.
 White, C. M. N. 1965. *A Revised Check-list of African Non-passerine Birds*. Government Printer: Lusaka.

Address: P. R. Colston, Sub-department of Ornithology, British Museum (Natural History), Tring, Hertfordshire, England.

©British Ornithologists' Club 1981.

A House x Somali Sparrow *Passer domesticus* x *P. castanopterus* hybrid

by J. S. Ash & P. R. Colston

Received 18 August 1980

A bird resembling a ♂ House Sparrow *Passer domesticus* was found by J.S.A. consorting with a small colony of Somali Sparrows *P. castanopterus* on 6 March 1980 in a sea-cave at Hal Hambo (01°54'N, 45°05'E), 31 km south-west of Mogadishu, Somalia. As there were problems concerning its identification it was collected the following day, and identified at the British

Museum of Natural History, Tring, by P.R.C. and Derek Goodwin as a hybrid between these 2 species.

FIELD IDENTIFICATION

At first the bird was thought to be *P. domesticus*, as it was clearly very different from the dozen or so *P. castanopterus* present; but closer observation showed that it possessed several puzzling features—notably a poorly defined white wing bar, no white supercilium—merely a pale patch near the base of the bill, and a creamy-yellowish wash on the whitish cheek patches and down the centre of the greyish underparts. From the limited literature available in Somalia it was tentatively identified as *P. d. indicus*, with the possibility, however, that it might be a hybrid. Its grey crown and rump ruled out all races of the Rufous Sparrow *P. iagoensis*, except for *insularis* and *hemileucus*, and these 2 Socotran forms were excluded because they both show a dark line over the ear coverts—a character found throughout the range of *P. iagoensis*.

MUSEUM IDENTIFICATIONS

The hybrid. The specimen was compared with long series of *Passer* spp. in the British Museum collection, together with a typical ♂ *P. c. castanopterus* collected on 26 June 1979 from the same site as the specimen under review. It was confidently identified beyond reasonable doubt as a *P. domesticus* x *castanopterus* hybrid, for the following reasons: basically it is *P. domesticus* sharing features of *P. castanopterus*, notably the yellowish cheeks; some of the black feathers on the mantle have whiter edges than in *P. domesticus* and are more akin to features shown by *castanopterus*; the normal conspicuous white wing bar of a ♂ *domesticus* is reduced to a narrow white line in the hybrid (*castanopterus* lacks a white wing bar); the rest of the plumage and the size of the specimen agrees with *P. domesticus*.

Description of hybrid. The whole of the top of the head from base of bill, grey; a small pale patch (reduced supercilium) near the base of the bill; a narrow chestnut band extending from just in front of and above the eye, over the ear coverts and round the nape; rest of the upperparts with near-black and whitish streaks on a greyish ground colour; rump grey; a black bib, scaly below; near white cheek patches washed with pale yellow; rest of underparts grey, but with pale yellow down the centre; wings chestnut with black streaks on coverts, and a single rather poorly defined whitish wing bar; bill black; tarsi yellowish-brown; wing-length 73 mm; weight 23.7 g; testes partly developed (8 mm). Registration Number: 1979-11-2.

The local ♂ *P. castanopterus* obtained the same day is the eastern, nominate form *P. c. castanopterus*, and is typical in all respects. Wing-length 70 mm; weight 17.8 g; testes partly developed (2 mm). Registration Number: 1979-11-1.

POSSIBILITIES OF ORIGIN

The origin of such a specimen clearly must be from somewhere within the present range of *P. castanopterus*, so that a review of the knowledge of this species' distribution in East Africa, and also that of *P. domesticus*, is necessary.

Distribution of P. castanopterus. The species' range is confined to the horn of Africa. The eastern, nominate race is common and widespread throughout Somalia and southeastern Ethiopia between 2° and 12°N and east of 41°E. It is the town sparrow of this region, but also has a rural distribution, and is particularly associated with the coast in eastern Somalia. The small colony at Hal Hambo found by J.S.A. is 167 km southwest of the nearest known

P. castanopterus colony, at Demodo (02°40'N, 46°14'E), and 206 km southeast of another fringe colony, at Baidoa (03°07'N, 42°38'E).

A western population, separated as *P. c. fulgens*, occurs in southwest Ethiopia in the Lakes Stephanie and Rudolf area and extends into northern Kenya. We can find no evidence to support the statements in Mackworth-Praed & Grant (1960) that it occurs in south central Ethiopia, nor that it is found in south Ethiopia (Urban & Brown 1971). The latter authors' reference to southeast Ethiopia should refer to the nominate form.

Distribution of P. domesticus. The House Sparrow is virtually unknown in Somalia and adjoining Ethiopia and Kenya. The reference in Mackworth-Praed & Grant (1960) to *P. d. niloticus* at Berbera (10°26'N, 45°02'E), "where it was probably introduced", presumably refers to the adult ♂ specimen (*niloticus*) in the British Museum collected by Dr. R. E. Drake-Brockman at Berbera on 9 April 1905 (Registration Number: 1905-6-1-9). However, we are unable to trace any report of this species in the literature from this locality, or from anywhere else in Somalia, and in particular it is not alluded to in Hall & Moreau (1970), White (1963) or Archer & Godman (1961).

For Kenya, Mackworth-Praed & Grant state that the House Sparrow *P. d. indicus* "probably now occurs at Mombasa". P. L. Britton (*in litt.* 19.4.80) has very kindly provided a detailed review of the present situation at Mombasa, which appears to be the only Kenya locality for *P. domesticus*. Following the discovery by him of a pair in April 1979, subsequent investigations by several observers revealed a small thriving breeding population; but all the indications were that this seemed to be a fresh introduction (probably by accident from a ship or ships), and that there was no previous evidence that it had ever become established on the East African mainland.

There are no records from Ethiopia.

Conclusion. The present hybrid can only have been bred within the range of *P. castanopterus*. It is unlikely that the *P. domesticus* parent involved originated from Mombasa, well outside the range of *P. castanopterus*, especially as all the birds in the small colony at Hal Hambo appear to be typical *castanopterus*. Berbera, as another possible source, and within the range of *P. castanopterus*, is over 1000 km away and there is no evidence that *P. domesticus* is there now. We must conclude therefore that the hybrid has arisen from a pairing between these two *Passer* species at an undiscovered site in Somalia, probably not too far distant from Hal Hambo, almost certainly involving a House Sparrow which arrived by a ship-assisted passage within the range of the Somali Sparrow.

To the best of our knowledge this is the only known occurrence of a *Passer domesticus* x *castanopterus* hybrid. Hybrid *P. domesticus* x *montanus* are not uncommon (Rooke 1957, Richardson 1957).

Acknowledgements: We thank Derek Goodwin for his help in the identification of specimens, and Peter Britton for his valuable notes on the status of *Passer domesticus* in Kenya.

References:

- Archer, G. & Godman, E. M. 1961. *Birds of British Somaliland and the Gulf of Aden*. Oliver & Boyd: Edinburgh & London.
- Hall, B. P. & Moreau, R. E. 1970. *An Atlas of Speciation in African Passerine Birds*. British Museum (Natural History): London.

- Mackworth-Praed, C. W. & Grant, C. H. B. 1960. *African Handbook of Birds of Eastern and North Eastern Africa*. Longmans Green: London.
- Richardson, R. A. 1957. Hybrid Tree x House Sparrow in Norfolk. *Brit. Birds* 50: 80-81.
- Rooke, K. B. 1957. Hybrid Tree x House Sparrow in Dorset. *Brit. Birds* 50: 79-80.
- Urban, E. K. & Brown, L. H. 1971. *A Checklist of the Birds of Ethiopia*. Haile Sellassie I University: Addis Ababa.
- White, C. M. N. 1963. *A Revised Check List of African Flycatchers, etc.* Government Printer: Lusaka.

Addresses: Dr. J. S. Ash, Division of Birds, National Museum of Natural History, Smithsonian Institution, Washington, D.C. 20560, U.S.A.
 P. R. Colston, British Museum (Natural History), Sub-Department of Ornithology, Tring, Hertfordshire, HP23 6AP, England.

©British Ornithologists' Club 1981.

New subspecies of *Pipreola riefferii* and *Chlorospingus ophthalmicus* from Peru by John P. O'Neill & Theodore A. Parker III

Received 25 September 1980

Studies in Peru by members of the Louisiana State University Museum of Zoology and their associates have turned up a rather astounding number of new forms of birds. Series of the cotinga *Pipreola riefferii* from the Carpish and Sira Mountains of central Peru are quite distinct and we propose to call them

Pipreola riefferii tallmanorum subsp. nov.

Type: Adult male, collected on 5 August 1973 by Erika J. Tallman on the trail to Hacienda Paty below (NE) Carpish Pass, Department of Huánuco, Peru, elevation c. 2200 m, No. 74145, Louisiana State University Museum of Zoology. (Dan A. Tallman original number 1734.)

Description: The male differs from males of all other subspecies in its combination of small size, shiny black head and throat and nearly unmarked lemon yellow lower breast and belly. Females differ from females of all other subspecies in their small size, the slightly darker (more bluish) green upperparts, and the slightly more golden yellow of the underparts.

Measurement of type (mm): Wing (chord) 85.2, tail 68.6, tarsus 19.5, culmen from base 13.9.

Range: So far as known, the upper Subtropical and lower Temperate Zones of the eastern slope of the Cordillera Carpish and the Subtropical Zone of the Cerros de Sira, both in the Department of Huánuco, central Peru.

Specimens examined: *Pipreola r. riefferii* (7). Colombia: "Bogota," 1 ♂ subad. (AMNH); "Columbia," 2 ♂♂ (AMNH); Subia, 1 ♂ (AMNH); El Roble, 1 ♀ (AMNH); parte alta de Fusugasuga, 1 ♀ (AMNH); El Eden, 1 ♂ (AMNH).

P. r. occidentalis (4). Colombia: Ricaurte, 1 ♂ (LSUMZ); Cerro Munchique, 2 ♀♀ (LSUMZ); Moscopan, 1 ♂ (LSUMZ).

P. r. chachapoyas (incl. *confusa*) (33). Peru: ridge E (above) San José de Lourdes, 2 ♂♂, 2 ♀♀ (LSUMZ); 20 trail km E La Peca, 4 ♂♂, 1 ♀ (= ♂?), 2 ♀♀ (LSUMZ); 12 trail km E La Peca, 1 ♀ (LSUMZ); Cordillera Colán, 1 ♀ (LSUMZ); 33 rd. km NE Ingenio, 2 ♂♂ (LSUMZ); 10 rd. km NE Abra Patricia, 4 ♂♂, 3 ♀♀ (LSUMZ); Chachapoyas, 1 ♂ (AMNH); La Lejia, 1 ♂, 1 ♀ (AMNH); San Pedro, 2 ♂♂, 1 ♀ (AMNH); Cumpang, 5 ♂♂ (LSUMZ).

P. r. tallmanorum (23). Peru: Cerros del Sira, 6 ♂♂, 5 ♀♀ (AMNH); trail to Hda. Paty, 8 ♂♂, 4 ♀♀ (LSUMZ).

Remarks: We take great pleasure in naming this new form for Dan A. and Erika J. Tallman whose studies of Carpathian birds have added much to the knowledge of Peru's avifauna.

The new form is most like *P. r. riefferii* of Colombia and Venezuela in having the underparts lightly marked, but the 2 are quite different in size (5 male *P. r. riefferii* have an average wing length of 90.9 mm and a tail of 72.2 mm, while 14 male *P. r. tallmanorum* have wing and tail averages of 84.0 mm and 68.6 mm respectively).

P. r. tallmanorum is quite distinct from its nearest relative to the north, *P. r. chachapoyas*. There are no *Pipreola* specimens known from the area between eastern La Libertad and central Huánuco, but the populations from these 2 areas are different enough from each other for us strongly to suspect that their ranges are not continuous. Indeed, the differences are such that detailed field studies could prove it to merit specific status.

In examining all known forms of *Pipreola riefferii* we came to the conclusion that the relationship between *P. r. chachapoyas* and *P. r. confusa* is indeed most confusing. Among 27 recently collected specimens of both sexes from within the range of *P. r. confusa* south into the range of *P. r. chachapoyas*, the differences between the 2 are obscure. Birds from southern Ecuador and northern Peru (south-central Amazonas, northern San Martín) are heavily marked below and all have the black of the upper breast washed with mossy green. Birds from the mountains east of the Río Chiriaco in northern San Martín are the most heavily marked, but just west of there in the mountains on the other side of the Río Chiriaco in south-central Amazonas the birds are fairly typical of *P. r. chachapoyas*. These Amazonas birds are, in general, slightly more heavily marked than birds in the paratypic series from nearer to the city of Chachapoyas. In a series from the Cordillera Colán, on the south side of the Río Marañón in central Amazonas (5° 34' S, 78° 19' W), there is enough variation for us to be able to pick out males typical of both *P. r. confusa* and *P. r. chachapoyas*. Actually, specimens in the series collected near the town of Chachapoyas are the least marked of all north Peruvian birds, but as noted above they can be matched by birds from the Cordillera Colán. With the lack of differences between the 2 forms, we consider that birds from eastern Ecuador south at least to eastern La Libertad in Peru should all be considered under a single name, *P. r. chachapoyas*.

P. r. tallmanorum is uncommon in the Carpathian Mountains; it was noted daily in small numbers between 2130 m and 2280 m, usually in pairs or groups of 3-4 individuals, almost always in fruiting trees of the family Melastomataceae. The song, given by both sexes, consists of several soft, high-pitched notes followed by a very thin, high-pitched "seeee"; this series of notes may be written "ti-ti-ti-seeee" and is quite like that of *P. r. chachapoyas*, both north and south of the Río Marañón, as well as reminiscent of vocalizations of *P. intermedia*. The latter species was also found to occur in the Carpathian region, and it narrowly overlaps with *P. riefferii* there, but seems to be more prevalent at higher elevations (2280 m to 2430 m).

Snow (1973) questioned the sympatry of *P. riefferii* and *P. intermedia* in the Department of La Libertad. In 1979, LSUMZ personnel found these 2 species together there, occasionally feeding in the same fruiting melastomes,

at Cumpang, between 2280 m and 2430 m. We now know that the 2 occur together at least in La Libertad and Huánuco in the Eastern Cordillera of central Peru. *Pipreola arcuata* and *P. pulchra* also inhabit the cloud forests of the Carpathian Mountains, occurring mainly higher and lower, respectively, than *P. riefferii*.

* * *

In 1947 John T. Zimmer, writing about the bush tanager *Chlorospingus ophthalmicus*, stated that "there is, as stated on an earlier page, a wide hiatus in northern Peru where the species has not been found, while *phaeocephalus* [= *C. o. phaeocephalus*] of Ecuador appears to remain beyond the Peruvian boundary. It is probable that some representative of the species will be found in suitable terrain between the Junín region and the Ecuadorian frontier, but it has yet to be discovered. Considering the quantity of material that has been assembled at various times by different workers in the region it is surprising that a member of the group has not been discovered to date".

We too find it surprising that no specimen of *C. ophthalmicus* was collected in northern Peru until 1968, as the species seems to be as common there as it is elsewhere in Peru. We have 26 specimens from the Departments of Amazonas, La Libertad, San Martín, and Huánuco. This previous lack of material serves to further highlight the general paucity of detailed ornithological investigations at higher elevations on the eastern slopes of the Peruvian Andes. The 23 specimens from northern Peru, south of the Río Marañón, are recognizably different and we propose should be known as

***Chlorospingus ophthalmicus hiaticolus* subsp. nov.**

Type: Adult male, collected on 24 August 1976 by John P. O'Neill, 10 km (by road) below (NE) Abra Patricia on the road to Rioja, Departamento de San Martín, Peru, elevation c. 1890 m, No. 82222, Louisiana State University Museum of Zoology. (John P. O'Neill original number 5657.)

Description: Most like *C. o. peruvianus* of southern Peru, but differing from that form by averaging slightly larger and by having the yellow breast band duller (slightly greener). There is also a tendency for most specimens to have less dark speckling on the throat, whiter bellies, and a less pronounced dark ear patch than is present in *C. o. peruvianus*. Also somewhat like *C. o. phaeocephalus* of Ecuador and extreme northern Peru (6 recently collected, see specimens examined), but overall brighter, with paler, less speckled throat, whiter belly, and yellowish (less olive) pectoral band.

Measurements of type (mm): Wing (chord) 72.9, tail 56.9, tarsus 23.0, culmen from base 14.9.

Range: So far as known, the upper Subtropical and lower Temperate Zones of the eastern Andes in the Departments of Amazonas (Cordillera Colán northeast of Bagua Chica), San Martín (mountains west of Rioja), La Libertad (Cumpang, on Tayabamba-Ongón trail), and Huánuco (Cordillera Carpathian, northeast of Huánuco city), but probably occurring in suitable habitat from the Cordillera Colán in Amazonas south at least to the north side of the canyon of the Río Huallaga in Huánuco.

Specimens examined: *Chlorospingus semifuscus* (9). Colombia: Ricaurte, 2 ♀♀ (LSUMZ); Ricaurte, 1 ♀, 1 ♂ imm. (FMNH); Cerro Munchique, 2 ♂♂, 3 ♀♀ (FMNH).

C. o. phaeocephalus (5). Ecuador: El Chiral, 1 ♂, 2 ♀♀ (AMNH); Sumaco

arriba, ♂ (AMNH). Peru: Playón, 1 sex? (LSUMZ); Sapalache-Carmen trail, 5 ♀♀ (LSUMZ).

C. o. biaticolus (26). Peru: 20 trail km E La Peca, 5 ♀♀ (LSUMZ); 10 km NE Abra Patricia, 3 ♂♂, 2 ♀♀, 1 sex? (LSUMZ); Cumpang, 3 ♂♂, 5 ♀♀, 1 sex? (LSUMZ); Paty Trail, 2 ♂♂ (LSUMZ); E slope Cordillera Carpish [= Paty Trail], 2 ♂♂, 2 ♀♀ (LSUMZ).

C. o. cinereocephalus (11). Peru: Cerros del Sira, 4 ♂♂, 4 ♀♀ (AMNH); Chelpes, 1 ♂, 1 ♀ (AMNH); Estera Ruana, 1 ♂ (LSUMZ).

C. o. peruvianus (10). Peru: Hda. Cadena, 1 ♂, 1 ♀ (FMNH); La Oroya, 2 ♂♂ (ANSP); Oconeque, 1 ♂, 1 ♀ (ANSP); Bosque Aputinye, 1 ♂, 1 ♀ (LSUMZ); Santo Domingo (Inca Mine), 1 ♀ (ANSP); 5 km NE San José on Río Huari Huari, 1 ♀ (LSUMZ).

Remarks: The fact that the new form was not discovered until 1968 is most surprising. We can only surmise that earlier workers did not spend time at the elevations where *Chlorospingus ophthalmicus* occurs. We have named the new form *biaticolus*, meaning "gap inhabitator," to highlight the fact that the apparent hiatus in the range of the species is not real.

C. o. biaticolus is common throughout its known range, and is frequently noted in mixed-species flocks of other tanagers and honeycreepers that move from fruiting tree to tree in primary forest and in advanced second growth at the forest edge. These bush-tanagers also search for insects on leaves, and in epiphytic growth on branches in the forest canopy and subcanopy. Males establish territories at the forest edge and in forest openings (i.e. treefalls), where they sing from inconspicuous perches 10–20 m above ground. The primary song (see Fig. 1) consists of an accelerating series of chip notes followed by a harsh trill, and has been recorded from June to October, but the species may sing throughout the year. This bush-tanager is most vocal after dawn and late in the afternoon.

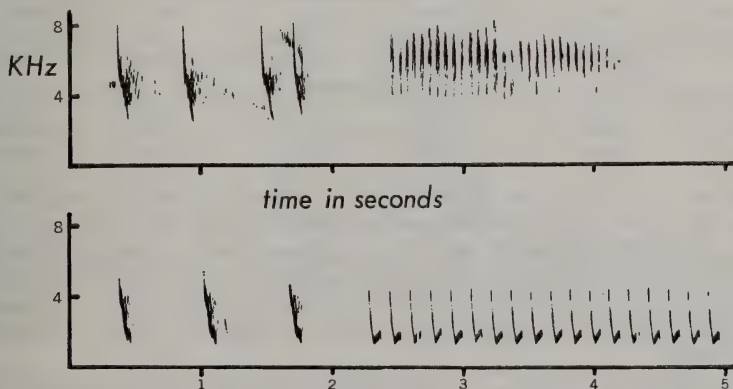


Fig. 1. Sonograms of a portion of the songs of *Chlorospingus ophthalmicus biaticolus* (upper) from near Abra Patricia, San Martín, Peru, and *C. o. cinereocephalus* (lower) from the Cerros del Sira, Huanuco, Peru. Both sonograms include only the last few notes of the series of chips, but show all notes in the trill.

We wanted to compare the voices of the various forms of *C. ophthalmicus* occurring in Peru, but the only tape-recordings available are those of *C. o. biaticolus* and *C. o. cinereocephalus*. Fig. 1 shows that the introductory chip

notes of the 2 forms are fairly similar, but the terminal trills (of at least these individuals) are quite different in rate, frequency and fine structure of the notes. Additionally, *C. o. biaticolus* has a high-pitched component in its song that is apparently lacking in the song of *C. o. cinereocephalus*. Despite these differences, we feel that before a decision can be made about their specific status, more tape-recordings of and playback experimentation with these and the forms *C. o. phaeocephalus*, *C. o. peruvianus* and *C. semifuscus* are needed.

The new form is somewhat puzzling morphologically in that it does not drastically differ from *C. o. peruvianus* of southern Peru. However, the populations of the races to the north and south of it, *C. o. phaeocephalus* and *C. o. cinereocephalus* respectively, are distinctly different. *C. o. cinereocephalus*, which separates *biaticolus* from *peruvianus*, is drastically different, having the yellow portion of its pattern replaced by pale buff. It is also the largest of the Peruvian races, especially in wing length (see Table 1). If *C. o. biaticolus* were in contact with *C. o. peruvianus*, we would probably merge the 2 under one

TABLE 1
Selected measurements (mm) of the four Peruvian races of *Chlorospingus ophthalmicus*

WING		TAIL		CULMEN FROM BASE	
males	females	males	females	males	females
<i>C. o. phaeocephalus</i>					
n=2	n=2	n=2	n=2	n=2	n=2
70.0-71.0	59.6-63.8	56.3-59.3	47.7-52.8	14.3-14.7	14.2-14.5
(70.5)	(61.7)	(57.8)	(50.3)	(14.5)	(14.3)
<i>C. o. biaticolus</i>					
n=11	n=10	n=12	n=9	n=12	n=9
70.2-74.9	66.0-68.5	55.3-63.0	54.9-59.1	13.5-15.2	14.2-14.9
(72.1)	(66.6)	(60.0)	(56.7)	(14.7)	(14.5)
<i>C. o. cinereocephalus</i>					
n=7	n=4	n=6	n=4	n=7	n=4
69.5-74.9	65.9-71.0	60.0-64.0	55.5-60.0	13.0-15.9	13.5-15.5
(73.2)	(67.5)	(62.1)	(58.1)	(14.4)	(14.1)
<i>C. o. peruvianus</i>					
n=5	n=5	n=5	n=5	n=4	n=5
64.0-71.5	58.2-68.5	56.5-60.0	53.0-60.9	13.8-14.8	12.8-14.6
(67.1)	(64.4)	(59.0)	(57.0)	(14.4)	(14.0)

name, but since the 2 are separated by a distinctly different form, and are separable on morphological criteria, we feel that the north-Peruvian bird should be distinguished by name*. *C. o. phaeocephalus*, recently collected in Peru from the mountains east of Huancabamba, is apparently totally separated from the new form by the arid Marañón valley. There is no indication that gene flow presently takes place between any of the 4 Peruvian subspecies.

The specific status of *C. o. cinereocephalus* has always been questionable. It was originally described as a separate species, but was later made a subspecies of *C. semifuscus* (Hellmayr 1936), which it resembles in having the yellow ventral markings replaced by buff. It is, however, now again considered to be a subspecies of *C. ophthalmicus*.

* A series of 20 specimens of *C. o. peruvianus* collected in the Department of Puno, Peru by LSUMZ personnel after this paper went to press, show the colour differences between *peruvianus* and *biaticolus* to be even more obvious than previously ascertained.

We attempted to gather data to determine the relationships of *C. o. cinereocephalus* to *C. semifuscus* and of both of them to the rest of the *C. ophthalmicus* complex, but not enough information exists to do so. We predict that *C. semifuscus* will be found to be restricted to the western Andes of Colombia and Ecuador and that in Ecuador it will be actually found only on the western slopes. The only place that *C. semifuscus* and *C. ophthalmicus* have been collected together is Guala, on the west slope of the Western Andes in Ecuador, but there is some doubt as to the actual site where the *C. ophthalmicus* specimen was collected (Zimmer 1947).

Acknowledgements: John S. McIlhenny, Babette M. Odom, H. Irving Schweppe, Laura R. Schweppe and E. W. Mudge have all been unfailing in their support of the LSUMZ field programmes. The Peruvian Dirección General Forestal y de Fauna of the Ministerio de Agricultura authorized our work. We thank John W. Fitzpatrick of the Field Museum of Natural History (FMNH) and Wesley E. Lanyon of the American Museum of Natural History (AMNH) for the loan of comparative material. O'Neill and Parker gratefully acknowledge grants in 1975 and 1979 respectively from the Chapman Memorial Fund of the AMNH. John S. Weske, who collected the series of *P. riefferii talmanorum* from the Cerros del Sira in Peru, also generously supplied a tape recording of *Chlorospingus ophthalmicus cinereocephalus*, also from the Sira.

References:

- Hellmayr, C. E. 1936. Catalogue of the birds of the Americas and the adjacent islands. *Zoological Series, Field Museum Nat. Hist.* 13: 458pp.
 Snow, D. W. 1973. The classification of the Cotingidae (Aves). *Brevoria* 409: 1-27.
 Zimmer, J. T. 1947. Studies of Peruvian birds No. 52, the genera *Sericossypha*, *Chlorospingus*, *Cnemoscopus*, *Hemispingus*, *Conothraupis*, *Chlorornis*, *Lamprospiza*, *Cissopis*, and *Schistochlamys*. *American Mus. Novitates* 1367: 1-26.

Address: Dr. J. P. O'Neill and T. A. Parker III, Museum of Zoology, Louisiana State University, Baton Rouge LA 70893, USA.

© British Ornithologists' Club.

The morphology of Sardinian Warblers

Sylvia melanocephala and Blackcaps *S. atricapilla* resident on Gibraltar

by J. C. Finlayson

Received 18 August 1980

The Sardinian Warbler *Sylvia melanocephala* and the Blackcap *Sylvia atricapilla* are the main resident foliage-gleaning insectivores at Gibraltar. The Sardinian Warbler is common within its essentially circum-Mediterranean range (Vaurie 1959, Voous 1960), and is associated typically with Mediterranean scrub. The Blackcap is widespread in the Palaearctic, and is mostly associated with mature woodland rather than with maquis, even within the Mediterranean region (Cody & Walter 1976). At Gibraltar, the 2 species occupy maquis vegetation and are often in close contact.

During 1973-1979 Sardinian Warblers and Blackcaps were mist-netted in a 2-ha site in the maquis at Gibraltar. At least 10 visits were made to the site most months. Retraps were frequent at all times of year and this established that Sardinian Warblers were resident and that 2 Blackcap populations were involved, a resident one and a migratory one. Ringing recoveries suggest

that these migratory Blackcaps originate from Western Europe north of the Pyrenees.

MORPHOLOGY

Sardinian Warbler *Sylvia melanocephala*

Williamson (1974) recognizes 4 sub-species of *S. melanocephala*. The nominate *S. m. melanocephala* occurs on the mainland of Mediterranean Europe and in North Africa. It is also found in the Balearic Islands, Corsica, Sardinia, Malta and Sicily. In the Middle East it is replaced by *S. m. momus*. The other 2 sub-species have very local distributions, *S. m. leucogastra*, considered synonymous with *melanocephala* by Vaurie (1959), in the Canary Islands and *S. m. norrisae* in Egypt. Vaurie (1959) also accepts *S. m. pasiphae* from Crete and some Greek islands, but it is omitted by Williamson.

In all aspects, with the important exception of bill length, the Sardinian Warblers which are resident on Gibraltar fall within the range of measurements of *S. m. melanocephala* (Table 1) and have similar plumage. They are, however, longer-billed (Williamson 1974), a small sample of skins conforming with Williamson's data, which suggests the difference in bill length is a real one.

TABLE 1

Measurements (mm) of Sardinian Warblers *Sylvia melanocephala* trapped at Gibraltar.
(S.D. = Standard Deviation)

	Mean (N) S.D.		Mean (N) S.D.
Bill length		Tarsus length	
Adult ♂	14.0(13) 0.81	Adult ♂	19.3(13) 1.31
Adult ♀	13.9(10) 0.70	Adult ♀	20.1(10) 1.74
Juvenile	13.7(73) 0.77	Juvenile	20.5(73) 1.68
Wing length		Tail length	
Adult ♂	58.2(13) 1.09	Adult ♂	59.4(13) 2.62
Adult ♀	58.1(10) 0.74	Adult ♀	56.3(8) 3.16
Juvenile	58.1(140) 1.68	Juvenile	57.1(71) 2.68

Bill, tarsus and tail measured with calipers to the nearest 0.1 mm. Wing measured with ruler to nearest mm (flattened measurement). $P > 0.05$ in all cases.

Blackcap *Sylvia atricapilla*

Throughout the whole of the Palaearctic mainland the Blackcap is divided into 2 sub-species, the nominate *S. a. atricapilla* in the west, and *S. a. dammholzi* in the east (Vaurie 1959). Several sub-species have also been described from islands. Vaurie (1959) recognizes *S. a. paulucci* in Sardinia and *S. a. heineken* from Madeira (Williamson (1974) adds the Canary Islands). Williamson recognizes the form *S. a. koenigi* from the Balearic Islands and also *S. a. atlantis* from the Azores and Cape Verde Islands. In general, the island forms appear darker than those of the mainland and some have shorter wings. In all island forms, the position of the tip of the second primary lies between the tips of primaries 6 and 7, or even between 7 and 8. In the nominate race this is rare, the tip of the second primary usually being in line with the tips of primaries 5 and 6 (Williamson 1974 and pers. obs.).

In Europe there is some evidence of a cline in some characters from west to east (Vaurie 1959), but in a series of skins examined at the British Museum (Natural History) I have not found any indication of grading of characters between northern and southern Europe. Nevertheless, the resident Blackcap at Gibraltar differs recognisably from the more northern nominate sub-species in several characters. Since migrant nominate birds are present at

Gibraltar alongside local birds from September to May, a comparative morphological analysis was possible using data gathered by a single observer.

Birds exhibiting the characteristics of local Blackcaps were ringed and retrapped at all times of year. During the breeding season (April–July) adults showing these characteristics were recorded nesting in the maquis and trapped birds had brood patches. Birds with characteristics of nominate birds were only trapped between September (a few) and May. They were never recorded breeding on Gibraltar. Some of these birds were trapped in subsequent winters.

The local Gibraltar form is smaller than the nominate and weighs less. Weights of 30 local Blackcaps trapped in mid-winter (all during the morning) were significantly lower than those of 30 nominate birds trapped under the same conditions (Table 2).

TABLE 2

Morphological differences between local and nominate Blackcaps *Sylvia atricapilla* trapped at Gibraltar. (S.D.=standard deviation).

	Local population		Nominate race		Probability of difference
	Mean(N)	S.D.	Mean(N)	S.D.	
Bill length (mm)	14.0(22)	0.969	14.2(14)	0.512	> 0.05
Wing length (mm)	68.6(30)	2.185	74.1(30)	1.874	< 0.001
Tarsus length (mm)	20.1(22)	1.365	19.8(14)	0.839	> 0.05
Tail length (mm)	59.1(22)	2.223	57.7(14)	1.917	> 0.05
Weight (g)	17.6(30)	0.916	18.6(30)	1.529	< 0.01
Tail:Wing ratio	86.15(22)		79.76(12)		—
Roundness of wing	80.80(23)	2.477	77.66(12)	1.733	—

Measurements as Table 1. Weight measured to nearest 0.1 g.

The wing is shorter in the local Blackcap, but bill and tarsus length are similar to the nominate (Table 2). The tail appears to be slightly longer in the local form than in the nominate but the difference is not significant. The wing relative to weight is shorter in the local Blackcap than in the nominate, indicating that the shorter wing is not just due to the bird's smaller overall size. The tail: wing-length ratio is higher in the local Blackcap (i.e. the tail is longer in relation to the wing), but this may be due to the reduction in wing length.

The index of roundness (as defined by Gaston 1974) shows that the wing is more rounded in the local form than in the nominate (Table 2). The wing formula of the local Blackcap differs from that of the nominate in several ways. The wing point is more frequently the fourth primary in the local Blackcap and the third in the nominate sub-species, but this is not exclusive. Primaries 1, 6, 7, 8, 9 and 10, and the first secondary are significantly longer, relative to the length of the wing, in the local Blackcap (Table 3). In the local Blackcap the position of the tip of the 2nd primary corresponds to that of the island forms, lying between the tips of primaries 6 and 7, very rarely between 5 and 6, which position is the rule in the nominate sub-species.

In the local form the plumage in general is much darker than in the nominate form. The upper parts are a dark olive, which extends to the rump. The nape is dark grey, only slightly greyer than the rest of the upper parts in the female, but more conspicuous in the male. The crown is jet black in the male and reddish-brown in the female. The wings and tail are dark

brown. The under parts are greyer, less white, than in the nominate. The flanks are a uniform dark buffish-olive. The under-tail coverts are like the flanks, the throat and breast are grey buffish-olive. The belly is dirty white, with a greyish tinge towards the breast.

TABLE 3

Relative lengths of flight feathers (mm, distant from wing point) in local and nominate Blackcaps *Sylvia atricapilla* trapped at Gibraltar.

Primary	Distance(mm) from wing point (N)	S.D.	95 % Confidence Limits
1st			
Local	35.0(22)	1.988	34.2-35.8
Nominate	37.7(13)	1.932	36.7-38.7
2nd			
Local	6.4(23)	0.988	6.0-6.8
Nominate	5.7(13)	1.032	5.1-6.3
3rd			
Local	0.2(23)	0.422	0-0.4
Nominate	0=pt(14)	—	—
4th			
Local	0=pt(23)	—	—
Nominate	0.1(14)	0.267	0-0.2
5th			
Local	1.9(23)	0.733	1.6-2.2
Nominate	2.5(13)	1.330	1.8-3.2
6th			
Local	5.4(23)	0.935	5.0-5.8
Nominate	7.1(13)	1.754	6.2-8.1
7th			
Local	7.5(22)	1.074	7.1-8.0
Nominate	10.5(13)	1.506	9.7-11.3
8th			
Local	9.7(23)	1.265	9.2-10.2
Nominate	12.3(12)	1.357	11.5-13.1
9th			
Local	11.1(23)	1.290	10.6-11.6
Nominate	14.3(14)	1.729	13.4-15.2
10th			
Local	13.1(22)	1.521	12.5-13.7
Nominate	16.4(14)	1.447	15.6-17.2
11th-Secondary			
Local	16.9(22)	1.670	16.2-17.6
Nominate	19.6(14)	1.447	18.8-20.4

Primaries numbered descendantly; secondaries ascendantly.

The local Blackcaps also differ from the island sub-species in several ways. They are more olive, less grey, on the upper parts than *S. a. paulucci*. The range of wing length given for the latter race is 68-74 mm (Williamson 1974), some of them therefore having longer wings than the Gibraltar form (maximum recorded wing length = 72 mm). Similarly *S. a. heineken* (70-77 mm) and *S. a. atlantis* (69-78 mm) also have longer-winged individuals than

the Gibraltar form. Both *S. a. heineken* and *S. a. atlantis* have melanistic forms, but no such type has been found in Gibraltar. The separation of the Gibraltar form from *S. a. koenigi* is less clear, as this sub-species appears to have been identified from only 3 male skins, and comparative quantitative data cannot be used to distinguish them.

DISCUSSION

The 2 resident *Sylvia* species on Gibraltar thus differ morphologically from other known forms of their own species. The Blackcaps resident on Gibraltar have some resemblance to some of the island forms but it is unlikely that they share a common ancestor. It is more likely that these similarities are due to similar selective pressures acting in the different geographical areas. Most of the island forms have shorter, more rounded wings than the migratory forms, probably as a result of their sedentary existence (Gaston 1974).

It is not known if the Gibraltar variants of the Sardinian Warbler and the Blackcap are restricted to the Rock. The Sardinian Warbler is widespread in the area around Gibraltar and there ought to be considerable gene flow between populations in the area, preventing the Gibraltar population from becoming genetically isolated (note however that of over 800 Sardinian Warblers ringed at Gibraltar none has been recovered in Spain or Morocco). The Blackcap, on the other hand, is a rare nesting species in the Spanish hinterland and along the Moroccan coastline (Professor F. Bernis, Dr C. M. Herrera, Mr J. Pineau, pers. comm.), and the Gibraltar population may on that account be genetically isolated; at least the chances of this being the case must be greater than for the Sardinian Warbler population. Irby (1895) commonly found the Blackcap on the Rock, but only a few pairs nested there, mainly in gardens; it may have established a good foothold there only recently as a breeding species, though alternatively the few seen by Irby may have been remnants of a larger breeding population when Gibraltar was wooded (Finlayson 1979).

It is not possible to be certain of the reasons for the variations described. It is likely that the Gibraltar Blackcap has recently invaded the maquis on the Rock (Finlayson 1979) and that it has become morphologically adapted to this new breeding habitat. A shortening and rounding of the wing, an increase in the wing:tail ratio, and a decrease in size, are modifications consistent with species colonizing denser and lower vegetation than they have previously occupied (Gaston 1974). In this aspect the Blackcap is converging significantly with the Sardinian Warbler which is a typical maquis inhabitant. The local Sardinian Warbler may not differ from others in the neighbourhood of Gibraltar, but if the bill of Gibraltar birds is in fact longer, it may be an adaptation to taking a wider range of prey items than normal, since the range of breeding *Sylvia* species on Gibraltar is very small. In other words, if the long beak is typical of the Gibraltar population, it could have evolved as a form of character release (Grant 1972).

Acknowledgements: I would like to thank my wife, Geraldine, and John Cortes for helping me in the field and for many useful comments on the subject matter of this paper. The following kindly read earlier drafts of this paper: Dr. N. B. Davies, Dr. C. M. Perrins, Dr. U. Safriel and Dr. D. W. Snow. The British Ornithologists' Union, through the David Lack studentship, held at the Edward Grey Institute, Oxford, financed my 3 years work at Gibraltar.

References:

- Cody, M. L. & Walter, H. 1976. Habitat selection and inter-specific interactions among Mediterranean sylviid warblers. *Oikos* 27: 210-238.
- Finlayson, J. C. 1979. The Ecology and Behaviour of Closely Related Species at Gibraltar (with special reference to swifts and warblers). D.Phil. thesis, Oxford.
- Gaston, A. 1974. Adaptation in the genus *Phylloscopus*. *Ibis* 116: 432-450.
- Grant, P. R. 1972. Convergent and divergent character displacement. *Biol. J. Linn. Soc.* 4: 39-68.
- Irby, L. H. 1895. *The Ornithology of the Straits of Gibraltar*. London: Taylor & Francis.
- Vaurie, C. 1959. *The Birds of the Palearctic Fauna*. Witherby: London.
- Voous, K. H. 1960. *Atlas of European Birds*. Nelson.
- Williamson, K. 1974. *Identification for Ringers*. BTO Field Guides, Nos. 7-9 (Genera *Cettia*, *Locustella*, *Acrocephalus*, *Hippolais*, *Phylloscopus*, *Sylvia*).

Address. Dr. J. C. Finlayson, 19 Warspite House, Varyl Begg Estate, Gibraltar.

©British Ornithologists' Club 1981.

Three bird species new to Bolivia

by S. W. Cardiff and J. V. Remsen, Jr.

Received 11 September 1980

Fieldwork conducted in the Departamento La Paz, Bolivia by the authors during summer 1980 produced specimens of 3 bird species not previously recorded from the country.

CHAMAEPETES GOUDOTII Sickie-winged Guan

On 17 June, Cardiff collected 2 of this species, probably a mated pair, in humid Temperate zone forest at Cotapata (=Cocapata on some maps), 4.5 km WNW Chuspipata, alt. 3300 m:— Louisiana State University Museum of Zoology (LSUMZ) 95593, ♂, testes 7 x 2.5 mm; 740 g, heavy fat; and LSUMZ 95594, ♀, ovary 17 x 12 mm, largest ovum 4 mm diameter; 778 g, heavy fat. Both birds had been feeding on hard purple fruit (7 mm diameter), several types of seeds (1 mm dia., 4 mm dia., and 4 x 4 x 6 mm), and pebbles (stomach contents of LSUMZ 95593 deposited in LSUMZ Stomach Contents Collection). Cardiff secured another specimen on 21 June at the same locality: LSUMZ 95595, ♀, ovary 20 x 10 mm, largest ovum 4.5 mm dia., 772 g, heavy fat, stomach full of reddish fruit 4 mm dia., black seeds of 1 mm dia., some leaf parts, and pebbles. All birds were observed in the top or middle levels of trees 10-13 m in height. These were the only definite sightings made of this species during our 28 full days at Cotapata (28 May-24 June). The 3 specimens represent a distinct new subspecies to be described elsewhere (Cardiff in prep.).

The Sickie-winged Guan had not been recorded previously south of Dpto. Junin, Peru (Meyer de Schauensee 1966, Delacour & Amadon 1973). It probably has a continuous distribution in appropriate habitat types from Colombia to central Bolivia, but it is easily overlooked due to its secretive habits, this possibly accounting for the apparent large gap in the southern portion of the range. Although most authors list the Sickie-winged Guan as occurring in Temperate as well as Subtropical zone forest (Meyer de Schauensee 1966, Delacour & Amadon 1973), the Cotapata records appear to be at an unusually high altitude for this species. Intensive fieldwork in the

Subtropical and Temperate zones of Peru by LSUMZ personnel during the past 10 years has produced only 10 specimens of *C. goudotii*. Those with altitude data (9) were taken at elevations ranging from 793 to 2100 m (mean 1483 m). Two LSUMZ specimens from Colombia were taken at 2400 m.

EUTOXERES CONDAMINI Buff-tailed Sicklebill

Four individuals were caught in mist nets in humid Upper Tropical zone forest in the Serrania Bellavista, 47 km by road north of Caranavi, altitude 1350 m:— LSUMZ 95670, 16 July; ♀, ovary 7 x 4 mm, largest ovum 1 mm dia.; 9.9 g, heavy fat; LSUMZ 95671, 27 July; ♀, ovary 4 x 2 mm, largest ovum 1 mm dia.; 9.0 g, light fat; LSUMZ 95672, 28 July; ♀, ovary 5 x 3 mm, largest ovum 1 mm dia.; 9.2 g, moderate fat; and LSUMZ 95673, 31 July; ♂, testes 2.5 x 2 mm; 11.5 g, heavy fat (all prepared by C. S. Cardiff). The stomachs of all 4 specimens contained insect parts. No free-flying individuals were observed during the 23 full days (10 July–2 August) we remained at this locality.

This range extension is not surprising since the species occurs continuously from southeastern Colombia to Dpto. Puno, Peru (Meyer de Schauensee 1966) in Tropical and Upper Tropical zone forest.

GRALLARIA GUATIMALENSIS Scaled Antpitta

A single singing individual was studied by Remsen and Cardiff and subsequently collected by Cardiff at the Serrania Bellavista site (see under *Eutoxeres condamini*) on 25 July:— LSUMZ 96068, ♂, left testis 6 x 3 mm; skull ossified; 89 g, little fat, stomach full of arthropod parts (stomach contents deposited in LSUMZ Stomach Contents Collection). This individual was located as it sang repeatedly from one of the few level areas in the generally steep terrain. The bird displayed moderate interest towards imitations of its song. Singing usually took place on slightly elevated perches such as dead logs, with one to many songs given before hopping or flying to the next song perch. One such flight was estimated to cover 10 m. Another individual was heard by Remsen on 27 July at the same locality.

This species was not previously recorded south of Dpto. Cuzco, Peru (Meyer de Schauensee 1966). The presently known distribution is more disjunct than those of species such as *Eutoxeres condamini* (see above), but future fieldwork may fill in current gaps. We suspect the species is continuously distributed in appropriate habitat from Mexico to central Bolivia and has probably been overlooked in certain areas due to its secretive habits and limited altitudinal distribution.

Acknowledgements: We are grateful to Dr. Arturo Castaños, Dirección de Ciencia y Tecnología and to the Academia Nacional de Ciencias for permission to work in Bolivia. Prof. Gaston Bejarano and Dr. Jorge Velasco provided invaluable assistance. We are grateful to Mrs. Babette Odum, Mr. John S. McIlhenny, and Mr. and Mrs. H. Irving Schweppe for their generous financial support.

References:

- Delacour, J. & Amadon, D. 1973. *Curassows and Related Birds*. Amer. Mus. Nat. Hist., New York.
Meyer de Schauensee, R. 1966. *The Species of Birds of South America and their Distribution*. Narberth, Pennsylvania: Livingston Press.

Address: S. W. Cardiff and J. V. Remsen, Jr., Museum of Zoology, Louisiana State University, Baton Rouge, Louisiana 70893, U.S.A.

Breeding of six Palaearctic birds in southwest Mauritania

by P. W. P. Browne

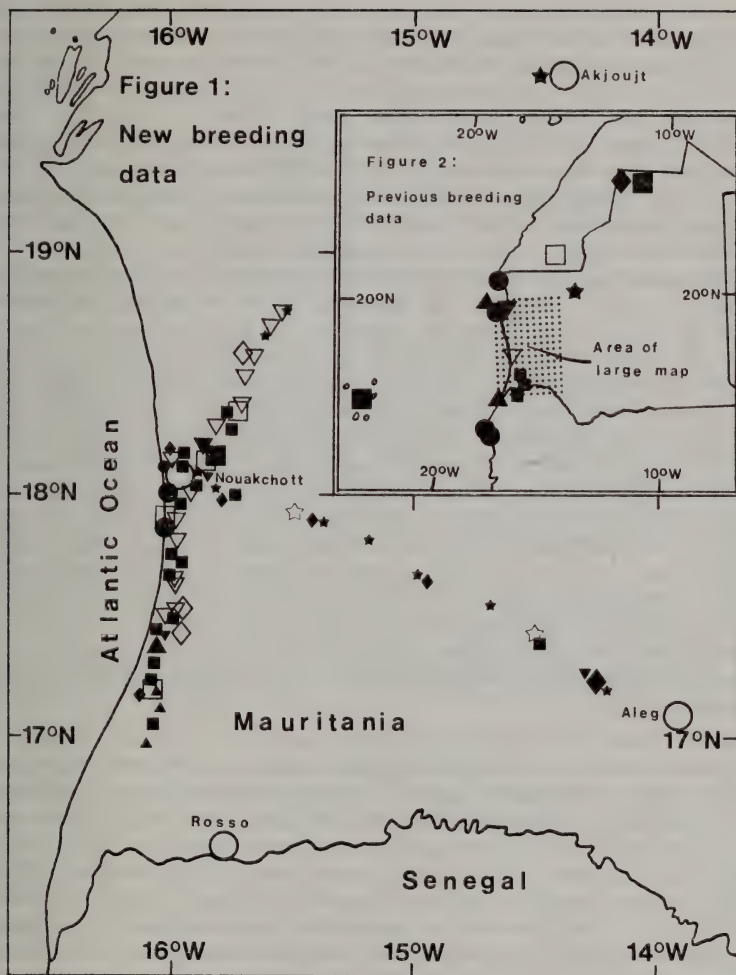
Received 17 August 1980

While living in Nouakchott during the years 1978–1980, I discovered evidence of the breeding of the Kentish Plover *Charadrius alexandrinus*, Cream-coloured Courser *Cursorius cursor*, Gull-billed Tern *Sterna nilotica*, Hoopoe Lark *Alaemon alaudipes*, Great Grey Shrike *Lanius excubitor* and Desert Sparrow *Passer simplex* in parts of southwest Mauritania where breeding has not previously been reported. These species appear to reach the southern extremity of their breeding range in or near this area. The localities are shown in Figure 1. For comparison, breeding data of other authors are given in the inset map Figure 2.

CHARADRIUS ALEXANDRINUS. Kentish Plovers are present the whole year in Southern Mauritania and in 1978 maximum numbers were seen in March and April (monthly counts not made in other years). On passage, they were sometimes seen inland, but in the breeding season only observed on the coast near Nouakchott. On 28 May 1978, I found a nest of 3 eggs about 1½ km from the ocean (18°02'N, 16°00'W) near an excavated saline pool. In 1979 I saw one chick with 2 adults there on 8 July, and there was a pair of adults with 2 fullgrown young on 14 June 1980. On 9 June 1979, I saw 2 chicks with a party of 4–5 adults by another excavated saline pool about ½ km nearer the ocean. The other nesting location was some 18 km further south (17°53'N, 16°02'W), by a natural saline lake and series of pools just behind the dunes, 200–400 m from the ocean. On 14 June 1980, I saw one small chick with an adult, 2 chicks almost able to fly with a pair of adults, and another pair of adults with 2 fullgrown juveniles.

It has long been known that *C. alexandrinus* breeds on the northern coast of Mauritania. Bird (1937) reported it at Nouadhibou (c. 21°N) and Trotignon (1980) on the Banc d'Arguin (c. 19°30'N). It has recently been discovered nesting on the coast of Senegal, at c. 14°10'N on 13 July 1970 (Von Westenhausen in Morel 1972) and at 13°55'N on 19 May 1979 (Prevost in Morel 1980). The Nouakchott observations therefore fill a gap in its known range, and it is to be expected that there are other undiscovered breeding places on the Mauritanian coast.

CURSORIUS CURSOR. During 1978, I thought the Cream-coloured Courser was a winter visitor only to southwest Mauritania, for I saw it from January to March and not again till August. This impression was reinforced by literature covering the region (Heim de Balsac & Mayaud 1962, Mackworth-Praed & Grant 1970). However, in 1979, as I widened the area of my explorations, I found that the species occurred throughout the summer. On 16 June 1979, 12 km northeast of Nouakchott (18°10'N, 15°54'W), I saw 2 adults with a juvenile not quite as big as themselves, somewhat spotted and without grey on the crown. Again, a juvenile as big as the adults was seen there on 14 October 1979. On 15 July 1979 at another location (18°21'N, 15°44'W) I saw a juvenile with adults and yet another (¾ adult size) at 18°09'N, 15°55'W on 29 July 1979. All these juveniles could fly, but it should be noted that adults had been seen in these areas for some weeks prior to the appearance of the juveniles.



KEY

Species	Eggs &/or chicks	Other breeding evidence	Present in breeding season
Kentish Plover	●		●
Cream-coloured Courser	■	□	■
Gull-billed Tern	▲	▽	▲
Hoopoe Lark	▼		▼
Great Grey Shrike	◆	◇	◆
Desert Sparrow	★	☆	★
Town		○	

In 1980, Cream-coloured Coursers were again persistently seen during the spring and summer. On 18 May 1980, in the company of Mr. Bruce Heath, I found 2-3 chicks unable to fly, with 2 adults, at 18°10'N, 15°54'W. One chick was caught and photographed. On 7 June 1980, halfway between Nouakchott and Rosso (on the new road, 17°12'N, 16°05'W), I saw a party of 5 adults and 2 fullgrown young. There was a fullgrown juvenile with an adult near the coast at 17°53'N, 16°02'W on 14 June 1980.

Altogether, during 1979 and 1980, Cream-coloured Coursers were seen at 23 locations between 17°04'N and 18°21'N during the breeding season. Juveniles or chicks were found at 6 of these locations.

This represents a considerable extension southwards of the known breeding range of this species on the mainland of West Africa. The previous furthest south proof of breeding seems to be that obtained by Heim de Balsac in Zemmour (around 25°30'N, 11°04'W) in 1947 (*loc. cit.*), c. 850 km NNE of where proof of breeding was obtained in 1980. However, he also reports that Valverde saw flying young in southern Spanish Sahara, about 22°N, and the species is resident in the Cape Verde Islands around 15°-17°N (Serle & Morel 1979). Cream-coloured Coursers were previously observed in the breeding season as far or even further south than in my records, though with no sign of breeding: on 20 April 1947 by Heim de Balsac (*loc. cit.*) halfway between Nouakchott and Rosso in Mauritania (on the old road, 17°13'N, 16°04'W) and halfway between Rosso and St. Louis in Senegal (16°16'N, 16°06'W); on 30 May 1960 by Dr. G. Morel (*pers. comm.*) at El Rhars, Mauritania (16°46'N, 15°36'W).

The habitat favoured by these birds in 1978-1980 was flat steppe, usually without sand dunes, but with frequent low bushes (*Maerua crassifolia*, *Tamarix senegalensis*, etc.)

STERNA NILOTICA. The Gull-billed Tern is known to breed in the spring in quite large numbers on the Mauritanian coast at the Banc d'Arguin, c. 19°30'N (some 1600 pairs in 1978—Trotignon 1980). It was also found to be laying in May and June 1972 on an island just south of St. Louis on the coast, c. 15°50'N (Latour 1973). I have often observed it flying over the ocean along the coast of Mauritania, but the birds referred to here were seen inland. They occurred in the rainy season, end June to early October, in 1978 and 1979. They appeared to be hawking for insects over the steppe and were sometimes seen in considerable numbers (about 500 together on 8 October 1978).

On 24 September 1978, c. 80 km south of Nouakchott (17°22'N, 16°04'W), I found 8 adults by a lake of about 1 km by ½ km, created by the rain. Some earth banks formed an island and on these I located two Gull-billed Terns' nests, one empty and one with a single egg. There were 10 birds here on 8 October 1978. In 1979 there was not sufficient water to form a lake.

The interest of this site lies not only in its inland location (c. 6 km from the ocean) but also in the fact that these birds had adopted the tropical rainy season nesting pattern, contrary to the coastal birds which nest in the spring, as is usual for this species in Palaearctic regions.

ALAEMON ALAUDIPES. The Hoopoe Lark was recorded as occurring, and indeed nest building was reported, as far south as Nouakchott (18°05'N) by Heim de Balsac & Mayaud (*loc. cit.*). I recorded this species in song at many

locations during the years 1978–1980 between c. 18°45'N (89 km northeast of Nouakchott) and 17°30'N (64 km south of Nouakchott). I did not explore further north, but went much further south and did not see the bird at all south of 17°15'N.

On 27 April 1980, I found a nest with one egg (bird sitting) at 18°10'N, 15°54'W (12 km northeast of Nouakchott). It was in the top of a *Maerua crassifolia* bush about 50 cm high, on flat bare steppe with little vegetation. The nest still had one egg on 28 April; on 1 May it was empty.

I can find no other definite proof of breeding in Mauritania apart from a nest discovered on the Banc d'Arguin (Trotignon 1980). If it is assumed that frequent song and song flights indicates breeding, then it seems likely that this species breeds as far south as 17°30'N.

LANIUS EXCUBITOR. During 1978, I thought that the Great Grey Shrike was only a winter visitor to the Nouakchott area, as I did not see it in the summer months. However, on 27 July 1979, I saw 3 juveniles south of Nouakchott (17°30'N, 16°02'W), on 5 August 1979 one juvenile (17°33'N, 16°01'W) and on 30 September 1979 2 juveniles with an adult northeast of Nouakchott (18°41'N, 15°37'W). During the summer of 1980, I saw adults in several places. There were again juveniles around 17°30'N, 16°02'W on 10 July and on 20 July 1980 I found a nest with a bird sitting on 4 eggs near Aleg (17°15'N, 14°16'W).

The only previous breeding records for Mauritania appear to be those of Heim de Balsac (*loc. cit.*) who recorded in 1947 several nests in Zemmour (c. 25°30'N, 11°04'W) in which eggs were laid January–March. Evidently in southern Mauritania the species breeds during the rainy season and there is an influx in the winter months. The race I observed was *elegans*, since the rump was grey, not white.

PASSER SIMPLEX. During 1978 and 1979, I saw little of the Desert Sparrow, as most of my activities were near the coast or near the Senegal River. However, I did find the species occasionally along the roads leading ESE and NE from Nouakchott. On 25 February 1979, with Dr. and Mrs. G. Morel, I visited Akjoujt and just to the west of the town (19°44'N, 14°28'W), we found 2 nests of the species. Adults were bringing food to the nests and young could be heard calling inside.

During 1980 I made more trips to the ESE from Nouakchott and found Desert Sparrows at many points along this road, starting about 14 km from the coast, and continuing at least as far as 17°15'N, 14°16'W. They were in small groups of up to a dozen, and in many cases in the same area as the Sudan Golden Sparrow *Passer luteus*. There were numerous nests (between 50 and 300 per square km) which may have belonged to either species, located in *Balanites aegyptiaca* and *Acacia* sp. bushes or low trees. Most nests were unoccupied, but on 20 July 1980 at 17°57'N, 15°28'W, a female was seen bringing nesting material and at 17°25'N, 14°31'W, a pair were flying around and into a finished but empty nest. The habitat of the species was sandy steppe, lightly bushed with the thorny trees mentioned. The birds also occurred around isolated buildings and in the town of Boutilimit (17°33'N, 14°42'W). I have not seen the species nearer than 14 km from the coast. In the coastal strip, there is a preponderance of non-thorny bushes (*Salvadora persica*, *Tamarix senegalensis*, *Euphorbia balsamifera* and *Maerua crassifolia*).

Previous records of breeding of this species in Mauritania were only from the Adrar (north of 20°N) by Heim de Balsac (*loc. cit.*).

OTHER SPECIES. I have recorded during their normal breeding season 28 other species in southwest Mauritania whose normal breeding range lies further north. Of these, 4 species have been known to breed in Mauritania, with some evidence but no proof of breeding near Nouakchott:— Spotted Sandgrouse *Pterocles senegallus* (flocks observed coming to Nouakchott from north to drink all months except August and October–December, when I was unable to visit the drinking hole); Bar-tailed Desert Lark *Ammomanes cincturus* (seen all times of year along road from Nouakchott to the NE; flying juveniles around 18°41'N, 15°40'W on 15 July 1979); Brown-necked Raven *Corvus ruficollis* (throughout the year, common to 17°N, scarce further south); Olivaceous Warbler *Hippolais pallida* (summer visitor April–July; pairs observed and song heard at Nouakchott; netted birds referred to race *opaca* with bill width 5.5 mm at base—Williamson 1976).

Discussion. The evidence of breeding presented in this paper indicates extensions of the *known* breeding range of 4 species: Cream-coloured Courser, Hoopoe Lark, Great Grey Shrike and Desert Sparrow. It is tempting to correlate this with the recent drought in the Sahel, which might be expected to bring desert species further south. However, I do not believe the evidence is very strong that there has been an extension south of the *real* breeding range of these species. The apparent extension may well be due to the greatly increased volume of observation in recent years. I have examined all the published and all the known unpublished ornithological data for the area of Mauritania shown on the large map (except Banc d'Arguin), and conclude that at least 4 times as much field observation and recording (c. 550 hours) was done by me in the years 1978–1980 as had been carried out in all the preceding years. This is partly thanks to the improved tarred road system built since about 1970, but also to the fact that I resided at Nouakchott and had enough free time to make these observations.

Acknowledgements: I would like to thank Dr. and Mrs. G. Morel for their help and encouragement.

References:

- Bird, C. G. 1937. Some notes from Port Etienne, Mauritania and the coast of Rio de Oro. *Ibis*, Ser. 14(1): 721–731.
- Heim de Balsac, H. & Mayaud, N. 1962. *Les Oiseaux du Nord-Ouest de l'Afrique*. Editions Paul Lechevalier: Paris.
- Latour, M. 1973. Nidification de cinq espèces de Laridés au voisinage de l'embouchure du fleuve Sénégal. *L'Oiseau et R.F.O.* 43(2): 89–96.
- Mackworth-Praed, C. W. & Grant, C. H. B. 1970, 1973. *African Handbook of Birds, Series 3*. Longman: London.
- Morel, G. J. 1972. *Liste Commentée des Oiseaux du Senegal et de la Gambie*. ORSTOM: Dakar.
- 1980. *Supplément de la Liste Commentée des Oiseaux du Senegal et de la Gambie*. ORSTOM: Dakar.
- Serle, W. & Morel, G. J. 1979. *Les Oiseaux de l'Ouest Africain*. Delachaux et Niestle: Paris.
- Trotignon, J. 1980. *Parc National du Banc d'Arguin. Comptes-Rendus d'Activités Scientifiques* (Oct. 77–Fev. 79). B.P. 124, Nouadhibou, Mauritania.
- Williamson, K. 1976. *Identification for Ringers. The Genera Cettia, Locustella, Acrocephalus and Hippolais*. British Trust for Ornithology: Tring.

Address: P. W. P. Browne, 115 Crichton Street, Ottawa, Ontario, K1M 1V8, Canada.

IN BRIEF

Rotating behaviour of the incubating Yellow-bellied Fruit Pigeon *Treron waalia*

On 9 April 1971 at Pong Tamale (9°40'N, 0°50'W), northern Ghana, I noticed a green pigeon sitting on a nest c.3m up in a bare, unidentified, tree. I circled round the tree trying to get a good view of the bird, which proved to be a Yellow-bellied Fruit Pigeon *Treron waalia*. The bird imperceptibly shuffled round so that its upraised tail was always presented towards me. The grey-brown and white barred underside of the tail looked like a piece of bark. The rotation was quite deliberate, as I must have moved through an arc of well over 100° always seeing the undertail. I got a flank view only when I was a considerable distance from the nest tree. The nest came to grief on 21 April, a well incubated egg being found beneath the tree. A few miles away, on the 21 April, a second nest of the same species was found when a bird was startled from a partly foliated tree. A more cautious approach on 24 April enabled me to see that at this nest too the incubating bird rotated to keep its cocked-up tail towards the observer. On 5 June the adult bird was disturbed off at least one squab.

This behaviour is clearly cryptic, keeping the conspicuous purple shoulder patch, and possibly some yellow of the underparts, from view. Presumably it would be effective against ground based predators such as man or the Patas Monkey *Erythrocebus patas*. It does not appear to have been reported before from *T. waalia* and is not mentioned by Tarboton & Vernon (1971) in their notes on the breeding of *Treron australis*. However, Crome (1975) gives a detailed description of similar behaviour by incubating male Purple-crowned Pigeons *Ptilinopus superbus*. He emphasises that he saw rotating only by males which, unlike the females, have brilliant colours on their heads. *Treron* and *Ptilinopus* are probably not very closely related genera (Goodwin 1967).

Acknowledgement: I am very grateful to Mr Derek Goodwin for his valuable advice about these observations.

References:

- Crome, F. H. J. 1975. Notes on the breeding of the Purple-crowned Pigeon. *Emu* 75: 172-174.
 Goodwin, D. 1976. *Pigeons and Doves of the World*. British Museum (Natural History): London.
 Tarboton, W. R. & Vernon, C. J. 1971. Notes on the breeding of the Green Pigeon *Treron australis*. *Ostrich* 42: 190-192.

J. Frank Walsh

30 January 1981

80 Arundel Road, Lytham St. Annes, Lancs., FY8 1BN.

Holarctic and Nearctic sandpipers

P. B. Taylor's paper 'Pectoral Sandpiper *Calidris melanotos* and Lesser Yellowlegs *Tringa flavipes* in Zambia' (*Bull.Brit.Orn.Cl.* 100(4): 233-235) mentions both species as Nearctic vagrants. This is only true of *T. flavipes*. *C. melanotos* breeds extensively throughout the northeastern Palaearctic and should therefore properly be described as Holarctic. In the past, Ginn & Brooke (*Bull.Brit.Orn.Cl.* 91(5): 125-126) and Ash (*Bull.Brit.Orn.Cl.* 93(1): 3-6), amongst others, have also incorrectly referred to *C. melanotos* as a Nearctic wader. It appears to be a common error. Dement'ev, Gladkov & Spangenberg (*Birds of the Soviet Union* (1951), Vol 3. Translation: Jerusalem 1969: 169) show the breeding distribution of *C. melanotos* as Holarctic and also (p. 174) that of the sympatric *C. acuminata*.

The English usage of 'American Pectoral Sandpiper' for *C. melanotos* and 'Siberian Pectoral Sandpiper' for *C. acuminata* has undoubtedly led to confusion in the past and it is unfortunate that the confusion of distribution as a result of these names is still perpetuated. 'Pectoral Sandpiper' for the Holarctic *C. melanotos* and 'Sharp-tailed Sandpiper' for the Palaearctic *C. acuminata* are less confusing, as recommended by Voous (*Ibis* 115: 628) and their proper faunal regions should be recognised when they are quoted in the literature.

Observers therefore should not jump to the conclusion that every Pectoral Sandpiper

is of Nearctic origin: a percentage of *C. melanotos* records from the western Palearctic and Afro-tropical regions are probably of the Palearctic stock, a fact which perhaps only ringing can establish.

Two other sandpipers, the Western Sandpiper *C. mauri* and Baird's Sandpiper *C. bairdii*, breeding in the Chukotski Peninsula are also correctly Holarctic and not Nearctic, as they are often incorrectly described.

19 February 1981

B. Zonfrillo

28 Brodie Road, Glasgow G21 3SB.

What has been the cause of the present scarcity of song birds?

Having celebrated my hundredth birthday on 30 October 1980, I am unquestionably the oldest member of the B.O.C. and therefore the member best qualified to compare the status of bird life in England during the last half of the last century with that of the first 80 years of this one. The magnitude of the difference is truly staggering.

In the 19th century on any bright summer's day the air would be filled with the joyous song and sounds of a multitude of birds—a multitude largely composed of summer migrants which had come to our land to breed. To-day in the same place and in similar conditions one would be lucky if one heard anything more than the twitter of a House Sparrow.

Some have attributed the scarcity of our song birds to the large number which almost certainly must have died during the devastating droughts which are known to have overwhelmed the parts of Africa in which so many of them were spending their winters. Others have thought the cause was probably owing to the persistent and excessive use of pesticides by farmers and gardeners alike. These activities may have been contributory causes of their present paucity, but I do not think they have ever been the main one. I am personally of the opinion that it must have been largely, if not wholly, due to the result of consistent predation on the part of a single species—namely the Magpie. Indeed I am inclined to believe that the predations of that species may be having an ill effect on the whole of our bird population. There can be no doubt that the number of Magpies increased alarmingly during the 1914-1918 War owing to their population not being checked by gamekeepers and landowners, who were, of course, serving this country in the army.

18 March 1981

Collingwood Ingram

It is with the deepest regret that we have heard of the death of Captain Collingwood Ingram on 19 May 1981, as this number goes to press.

He joined the Club in 1901, in which year he first exhibited a specimen at a Club Meeting and contributed to the *Bulletin* (Bull. Brit. Orn. Cl. 12: 39). He attended Meetings up to July and September 1973, reading a communication on the latter occasion (*loc. cit.* 93: 97) and will be remembered by many Members.

An obituary will be published in the *Ibis*.

NOTICE TO CONTRIBUTORS

Papers, whether by Club Members or by non-members, should be sent to the Editor, Dr. J. F. Monk, The Glebe Cottage, Goring, Reading RG8 9AP, and are accepted on the understanding that they are offered solely for publication in the *Bulletin*. They should be typed on one side of the paper, with double-spacing and a wide margin, and submitted with a duplicate copy on airmail paper.

Scientific nomenclature and the style and lay-out of papers and of References should conform with usage in this or recent issues of the *Bulletin*, unless a departure is explained and justified. Photographic illustrations, although welcome, can only be accepted if the contributor is willing to pay for their reproduction.

An author wishing to introduce a new name or describe a new form should append *nom.*, *gen.*, *sp.* or *subsp. nov.*, as appropriate, and set out the supporting evidence under the headings "Description", "Distribution", "Type", "Measurements of Type" and "Material examined", plus any others needed.

A contributor is entitled to 10 free reprints of the pages of the *Bulletin* in which his contribution, if one page or more in length, appears. Additional reprints or reprints of contributions of less than one page may be ordered when the manuscript is submitted and will be charged for.

BACK NUMBERS OF THE BULLETIN

Available post free on application to Dr. D. W. Snow, Zoological Museum, Tring, Herts HP23 9AP, England, as follows: 1973-1979 (Vols. 93-99) issues (4 per year), £2.00 each issue; 1969-72 (Vols. 89-92) issues (6 per year), £1.50 each; pre-1969 (generally 9 per year) £1.00 each. Indices £1.00 for Vol 70 and after, £2 for Vols 50-69, £2.50 for Vol 49 and before. Long runs (at least 10 years) are available at reduced prices on enquiry, higher prices may be charged otherwise for scarce numbers.

Vol. 100 No. 1 £4.00, No. 2, 3 & 4 £2.00 each issue.

MEMBERSHIP

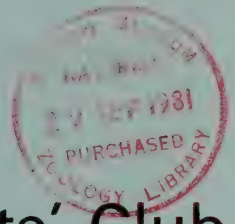
Only Members of the British Ornithologists' Union are eligible to join the Club: applications should be sent to the Hon. Treasurer, Mrs. D. Bradley, 53 Osterley Road, Isleworth, Middlesex, together with the current year's subscription. The remittance and all other payments to the Club should always be in *sterling* unless an addition of £1.00 is made to cover bank charges for exchange, etc. Payment of subscription entitles a Member to receive all *Bulletins* for the year. Changes of address and revised bankers' orders or covenants (and any other correspondence concerning Membership) should be sent to the Hon. Treasurer as promptly as possible.

SUBSCRIPTION TO BULLETIN

The *Bulletin* may be purchased by non-members on payment of an annual subscription of £12.00 (postage and index free). Send all orders and remittances in *sterling*, unless an addition of £1.00 is made to cover bank charges, to the Hon. Treasurer. Single issues may be obtained as back numbers (see above).

CORRESPONDENCE

Correspondence about Club meetings and other matters not mentioned above should go to the Hon. Secretary, R. E. F. Peal, 2 Chestnut Lane, Sevenoaks, Kent TN13 3AR.



Bulletin of the
British Ornithologists' Club



Edited by
Dr. J. F. MONK

FORTHCOMING MEETINGS

Tuesday, 17 November 1981 in the Senior Common Room, South Side, Imperial College, Prince's Gardens, S.W.7 at 6.30 p.m. for 7 p.m. Mr P. J. Hayman will speak on *Sea Birds*. Those wishing to attend should send their acceptance with a cheque for £5.25 a person to the Hon. Secretary at 2 Chestnut Lane, Sevenoaks, Kent TN13 3AR (telephone Sevenoaks [0732] 50313) to arrive not later than first post on Thursday, 12 November.

Tuesday, 12 January 1982 at the same venue and time, Dr T. J. Seller of Imperial College on *Are Bullfinches and Fruit Crops really incompatible?*

Tuesday, 2 March 1982 Professor Gordon H. Orians will speak on *Mates and Real Estate in Blackbird Social Systems*.

Gifts or offers for sale of unwanted back numbers of the *Bulletin* are very welcome

The Club has no reference copies of Vol. 48 and many earlier issues; these would be very specially appreciated

COMMITTEE

D. R. Calder (*Chairman*)
R. E. F. Peal (*Hon. Secretary*)
Dr. J. F. Monk (*Editor*)
J. G. Parker
R. A. N. Croucher

B. Gray (*Vice-Chairman*)
Mrs. D. M. Bradley (*Hon. Treasurer*)
R. D. Chancellor
Revd. G. K. McCulloch, O.B.E.

Bulletin of the BRITISH ORNITHOLOGISTS' CLUB

Vol. 101 No. 3

Published: 18 September 1981

The seven hundred and thirty-fifth Meeting of the Club was held in the Senior Common Room, South Side, Imperial College, London, S.W.7 on Tuesday 7 July 1981 at 7 p.m. The attendance was 26 Members and 12 guests.

Members present were: D. R. CALDER (*Chairman*), Major N. A. G. H. BEAL, R. M., P. J. BELMAN, K. F. BETTON, Mrs DIANA BRADLEY, Dr R. A. CHEKE, S. J. W. COLES, P. J. CONDER, S. CRAMP, R. A. N. CROUCHER, J. H. ELGOOD, Major M. D. GALLAGHER, D. GRIFFIN, P. HOGG, Revd. G. K. McCULLOCH, C. F. MANN, P. J. OLIVER, J. G. PARKER, R. E. F. PEAL, R. C. PRICE, Professor G. H. N. SETON-WATSON, S. A. H. STATHAM, K. V. THOMPSON, A. VITTERY, J. F. WALSH and C. E. WHEELER.

Guests present were: B. H. BECK, P. CLEMENT, Dr JUDITH A. COLES, Miss SARAH CONDER, Miss S. P. F. DIXON, SHEILA FRANCIS, Mrs JOANNA HOGG, J. KING, Mrs MARY OLIVER, Miss M. SAUNDERS, Mrs M. H. SETON-WATSON and C. WAKE.

Mr J. H. Elgood gave a most interesting address on "The Birds of Nigeria". After explaining the vegetation zones in Nigeria and their significance in bird distribution, he discussed the various groups of birds in that country, illustrating his remarks with many excellent slides of the species concerned.

Additions to a discography of bird sound from the Oriental zoogeographical region *by Jeffery Boswall and Wendy Dickson*

Received 2 October 1980

This paper's main aim is to list published gramophone records that include avian sound recorded in the Oriental zoogeographical region, and which have been issued or have come to light since the earlier discography (Boswall 1973). A few discs of recordings of captive Oriental species are also included. Published recordings of Oriental species common to other zoogeographical regions made outside the Orient may be traced first by consulting bibliographies of discographies (Boswall 1974, 1979) then the discographies themselves.

Unpublished recordings of Oriental species may be held by any of the archives listed by Boswall & Kettle (1979). The British Library of Wildlife Sounds (B.I.R.S., 29 Exhibition Road, London SW7 2AS) holds the following (approximate figures): 30 recordings of 20 species made in Sri Lanka by E. D. H. Johnson; 35 recordings of 32 species made in India by F. Martin Gauntlett; 35 recordings of 35 species made in Malaysia by T. C. White; 70 recordings of 50 species made in Thailand by H. Elliott McClure; 80 recordings of 60 species made by Derek Holmes in southern Thailand, West Malaysia, Sumatra, Java, Kalimantan and Brunei; and 400 recordings of 150 species made in Malaysia by Reg Kersley.

A large collection of Oriental bird recordings, mainly by Ken Scriven, is held by him at World Wildlife Fund Malaysia, Wisma, Damansara, P.O.

Box 769, Kuala Lumpur, Malaysia. These are being copied for the British Library of Wildlife Sounds. The bird recordings library of the late Datuk Loke Wan Tho is housed in the Jurong Bird Park, Singapore (verbal communication from Ivan Polunin).

The Library of Natural Sounds at Cornell University in the U.S.A. holds "Noteworthy collections with varying amounts of material from Pakistan, India, Nepal, Ceylon, Thailand and Malaysia". Also, Borneo and Taiwan are "well represented" (Gulledge 1979).

The following persons privately hold tape recordings of birds from the oriental region:- Derek Holmes (Hunting Technical Services Ltd., Wisma Kosgoro 19th Floor, P.O. Box 31/Kbyb, Jakarta, Indonesia) has, additional to those deposited at B.L.O.W.S., 9 species from southern Thailand, 10 from Sumatra, and 8 from Java; J. H. Becking (Institute for Atomic Sciences in Agriculture, 6 Keyenbergseweg, Postbus 48, Wageningen, Holland) has 132 species from Java and also 9 from Sumatra recorded by H. Bartels; Brian Bertram (Zoological Society of London, Regent's Park, London NW1 4RY) has a collection of recordings from Assam, particularly of the Indian Hill Mynah *Gracula religiosa* (Bertram 1970); Richard W. Beales (Fisheries Department, P.O. Box 2161, Bandar Seri Begawan, Brunei) has a small collection from Brunei; Graham Madge (Firway End, George Hill, Crediton, Devon, England) has a collection of recordings made in West Malaysia; Joe T. Marshall (National Museum of Natural History, Smithsonian Institution, Washington D.C. 20560, U.S.A.) has some material from different parts of southeast Asia, as has Ben F. King (c/o American Museum of Natural History, Central Park West at 79th St., New York, N.Y. 10024, U.S.A.); and Tom Roberts (P.O. Box 3311, Malir City Post Office, Karachi-23, Pakistan) has recordings of 257 species from Pakistan including winter visitors from the Palaearctic. H. Elliott McClure has prepared a tape under the title "Some bird calls and other sounds of nature in Thailand". The 85 separately announced recordings are mostly of birds and mostly recorded in Thailand by McClure himself. Copies are held by him (60 East Loop Drive, Camarillo, California 93010, U.S.A.) and at B.L.O.W.S. in London and Cornell in the U.S.A.

AMENDMENT

No. 1 and no. 2 listed in Boswall (1973), although first issued in 1970, are still obtainable (August 1980) but from a new address: P.M. Films, 39 Windsor End, Beaconsfield, Buckinghamshire, England.

ADDITIONS

4. Huxley, J. S. 1935. *Zoo voices*. Six 12 cm 78 r.p.m. single-sided paper-backed discs, no numbers. Sound Distributors, London, England.

Includes recordings of Sarus Crane *Grus antigone* and White-breasted Sea Eagle *Haliaeetus leucogaster*.

5. Greenhall, A. M. & Collias, N. 1954. *Sounds of Animals*. One 30 cm 33.3 r.p.m. disc, FX6124. Folkways Records and Service Corp., 701 Seventh Avenue, New York City, N.Y. 10036, U.S.A.

Includes recordings of Domestic Chicken *Gallus gallus* used to illustrate the paper by Collias & Joos (1953).

6. Zuh-ming, Dien. 1958. *The song of the Formosan Hwa-mei* *Garrulax canorus taiwanus*. One 25 cm 33.3 r.p.m. disc, BSR1. The Taiwan Museum, 2 Siangeang Road, Taipei, Taiwan.

Two caged male Hwa-mey *G. c. taiwanus* (to employ the spelling in Vaurie 1959: 431) recorded in Taipei in April 1958, introduced first in Chinese then in English by Prof. Charles Hartshorne. The two sides of the disc are the same.

7. Zuh-ming, Dien. Post 1958. *The song of the Formosan Hwa-mei* *Garrulax canorus taiwanus*,

Formosan Red-headed Babbler *Stachyris ruficeps precognita*, *Formosan Black Drongo* *Dicrurus macrocerus harterti* and *Formosan Treepie* *Dendrocitta formosae formosae*. One 25 cm 33.3 r.p.m. disc, BSR1/2. The Taiwan Museum, 2 Siangeang Road, Taipei, Taiwan.

Side BSR1 is the same as both sides of the previous disc (6). Side BSR2 gives the voices of the 3 remaining species listed in the title. The babbler is also called the Rufous-capped Babbler (King *et al.* 1975); the drongo is also called the King Crow (Vaurie 1959), and the treepie is known as the Grey Treepie (King *et al.* 1975).

8. Van de Werken, H. 1960. *Vogel Symphonie*. One 17 cm 45 r.p.m. disc, DE99.247, published with the *Artis-Animal-Encyclopaedia*, 254 pp., by Ploegsma for Royal Zoological Society, Plantage Kerklaan 40, Amsterdam, Holland.

Among 33 species recorded in Amsterdam zoo are on side 1: Indian Pied Hornbill *Anthraccos malabaricus*, Great Hornbill *Buceros bicornis*, White-crested Laughing Thrush *Garrulax leucolophus*, *Gracula religiosa*; and on side 2: White-bellied Sea Eagle *Haliaeetus leucogaster*, Peafowl *Pavo cristatus* and Brown-eared Pheasant *Crossoptilon mantchuricum*.

9. Duddridge, P. 1962. *Voices of Birdland*. One 25 cm 33.3 r.p.m. disc, no number. Midriver Recording Co. Obtainable from "Birdland", Bourton-on-the-Water, Gloucestershire, England.

Includes recordings of Barbary Dove *Streptopelia risoria*, Chinese Painted Quail (Blue Quail) *Coturnix chinensis*, Giant Indian Hornbill *Buceros bicornis*, and Greater Hill Myna *Gracula religiosa*.

10. Duddridge, P. 1962. *Wildfowl Calling*. One 17 cm 45 r.p.m. disc, 7EG 8764. HMV, London.

Includes Bar-headed Goose *Anser indicus*.

11. Morris, Desmond, 1965. *A Day at the Zoo*. One 17 cm 45 r.p.m. disc, Oriole EP7083. Oriole Records, London, England.

Side 1 includes Tawny Eagle *Aquila rapax*, and side 2 a laughing thrush sp. *Garrulax* sp.

12. Morris, Johnny. 1969. *Animal Magic*. One 30 cm 33.3 r.p.m. disc, Roundabout 4. BBC Records, London, England.

Includes Peafowl (captive) *Pavo cristatus*, Brainfever Bird or Plaintive Cuckoo *Cacomantis merulinus*, recorded in Singapore by I. Polunin, and White-breasted Sea Eagle *Haliaeetus leucogaster* recorded in Australia.

13. Anon. 1970. *Animal Sounds—Birds*. One 17 cm 33.3 r.p.m. disc, PC 045/6. Procaudio Ltd. for BPC Publishing Ltd. (Macdonald & Co. Publishers Ltd., Holywell House, Worship Street, London E.C.2.).

Includes Peafowl *Pavo cristatus*.

14. Anon. & Hediger, H. 1970. *Mit Professor Hediger im Zoo*. One 30 cm 33.3 r.p.m. stereo disc, Pick 93-060. Pick-Records, Brunnweissenstrasse 26, Postfach 198, CH 8049 Zurich, Switzerland.

Includes Indian Hill Myna *Gracula religiosa*.

15. Graul, A. 1971. *Im Zoo*. One 17 cm 45 r.p.m. disc, Graul 712. Arno Graul, Kisslingweg 44, 713 Mühlacker, Württemberg, West Germany.

The 18 avian species on side 2 include Hill Myna *Gracula religiosa*, Argus Pheasant *Argusianus argus*, Satyr Tragopan *Tragopan satyra*, Great Hornbill *Buceros bicornis*, Hooded Crane *Grus monacha*, Demoiselle Crane *Anthropoides virgo*, Sarus Crane *Grus antigone* and Peafowl *Pavo cristatus*.

16. Teeuwen, Gus. 1971. *Sounds of Singapore*. One 30 cm 33.3 r.p.m. disc, LP0811. G. Teeuwen, Singapore.

Side 2, band 4. "Bird fanciers . . . whilst their ears are tuned to the lovely song of long-tailed Shama birds, Chinese thrushes and tiny White Eyes . . ."—presumably White-rumped Shama *Copsychus malabaricus*, laughing-thrush sp. *Garrulax* sp., and white-eye sp. *Zosterops* sp.

17. Simms, Eric. 1971. *Wildlife in Danger*. One 30 cm 33.3 r.p.m. disc, RED 55M. BBC Records, London, England.

Includes recordings by Philip Wayre of captive Brown-eared Pheasant *Crossoptilon mantchuricum* and Cheer Pheasant *Catreus wallichii*.

18. Teeuwen, Gus. About 1971. *Birds of Malaysia* (Dutch and English). Two 17 cm 33.3 r.p.m. discs, TEE1 and TEE2. European Phono Club, Amsterdam, Netherlands.

Arranged for these 2 discs by Ko Zweeres, 15 of the recordings are the same as on nos. 1, 2 and 3 in the first part of the discography (Boswall 1973), but 11 species are new.

Side 1: Hill Myna *Gracula religiosa*, Red-winged Tree Babbler *Stachyris erythroptera*, Black-necked Tree Babbler *Stachyris nigricollis*, Paradise Flycatcher *Terpsiphone paradisi*, Striped Tit-Babbler *Macronus gularis*, Malaysian Black-headed Oriole *Oriolus xanthonotus*.

Side 2: Common Shama *Copsychus malabaricus*, Yellow-crowned Barbet *Megalaima henrici*, Red-tailed Tailorbird *Orthotomus sericeus*, Malaysian Peacock Pheasant *Polyplectron malacensis*, Silver-eared Mesia *Leiothrix argentauris*, Red-rumped Tree Babbler *Stachyris maculata*.

Side 3: Plain Babbler *Malacopteron affine*, Drongo Cuckoo *Surniculus lugubris*, Fantail Cuckoo *Cacomantis violaceus*, Malaysian Eared Nightjar *Eurostopodus temminckii*, Many-coloured Barbet *Megalaima rafflesii*, Slender-billed Crow *Corvus enca*, Bushy-crested Hornbill *Anorrhinus galeritus*.

Side 4: Greater Red-headed Tree Babbler *Malacopteron magnum*, Black-necked Tailorbird *Orthotomus atrogularis*, Chestnut-capped Laughing-thrush *Garrulax mitratus*, Red-rumped Trogon *Harporhynchus diwaucelli*, Great Argus Pheasant *Argusianus argus*, Hume's Tree-Babbler *Stachyris rufifrons*, Black Crested Magpie *Platysmurus leucopterus*.

19. Encke, W. 1972. *Tierstimmen aus dem Krefelder Zoo*. One 17 cm 33.3 r.p.m. single-sided flimsy disc with book, 48pp. City of Krefeld, W. Germany.

Includes Hill Myna *Gracula religiosa*.

20. Palmér, S. & Boswall, J. 1973. *A Field Guide to the Bird Songs of Britain and Europe*. One 30 cm 33.3 r.p.m. disc, RFLP 5013. Swedish Broadcasting Corporation, Stockholm 105 10, Sweden.

Includes a recording made in India of wild Asiatic White Cranes *Grus leucogeranus*.

21. Scriven, K. 1974. *The Jungle Calls*. One 17 cm 45 r.p.m. disc, no number. World Wildlife Fund Malaysia, 8th Floor, Wisma, Damansara, Jalan Semantan, P.O. Box 769, Kuala Lumpur, Malaysia.

Side 1: Yellow-crowned Bulbul *Pycnonotus zeylanicus*, Pied Hornbill *Anthracoceros coronatus*, Greater Red-headed Babbler *Malacopteron magnum*, Hill Myna *Gracula religiosa*.

Side 2: Rhinoceros Hornbill *Buceros rhinoceros*, Black-crested Magpie *Platysmurus leucopterus*, White-rumped Shama *Copsychus malabaricus*, Great Argus Pheasant *Argusianus argus*.

22. Jellis, Rosemary. 1977. *Bird Sounds and Their Meaning*. One 30 cm 33.3 r.p.m. disc, BBC OP 224. Complements her book (256pp). British Broadcasting Corporation, 35 Marylebone High Street, London W1M 4AA.

Includes echo-locating calls of the Black-nest Swiftlet *Aerodramus maximus lowi* and the Mossy-nest Swiftlet *Aerodramus vanikorensis* and vocalisation of wild Indian Hill Myna *Gracula religiosa intermedia*.

23. Scriven, K. 1977. *Fables of the tropical forest* (Dutch). One 30 cm 33.3 r.p.m. disc, WNF 771, or standard cassette. World Wildlife Fund (Netherlands), Postbus 7, Zeist, Netherlands.

9 Indonesian fables are spoken in Dutch. Intervals employ recordings provided by W.W.F. (Malaysia) of Great Argus Pheasant *Argusianus argus*, Hill Myna *Gracula religiosa*, Greater Red-headed Babbler *Malacopteron magnum*, Yellow-crowned Bulbul *Pycnonotus zeylanicus*, White-rumped Shama *Copsychus malabaricus*, Black-crested Magpie *Platysmurus leucopterus*. Presumably the same recordings as on no. 21 (see back).

24. Gunn, W. W. H. & Gullledge, J. L. 1978 (although dated 1977). *Beautiful Bird Songs of the World*. Two 30 cm 33.3 r.p.m. discs, NAS 1000 A/B and NAS 1000 C/D, and 12pp. of text and illustration. National Audubon Society; and Cornell Laboratory of Ornithology, 159 Sapsucker Woods Road, Ithaca, New York 14853, U.S.A.

In this lavish publication the voices of 50 of the world's most musical avian songsters have been brought together and issued with 8 coloured plates specially prepared by Arthur Singer. Two of the species were recorded in the Oriental region: the Brown Laughing-thrush or Hwa-mey *Garrulax canorus* recorded in Taiwan by Sheldon Severinghaus and the White-eyebrowed Shama *Copsychus luzoniensis* in the Philippines by Joe T. Marshall.

25. Poulier, G. V., & Ranasinghe, D. 1978. *Bird Sounds of Sri Lanka*—1. One 17 cm 45 r.p.m. disc, no number. G. V. Poulier, 2 Sirigal Avenue, Kohuwala, Nugegoda, Sri Lanka.

Side 1: Ceylon Shama *Copsychus malabaricus leggei*, Brown-headed Barbet (or Oriental Green Barbet) *Megalaima zeylanica* and Koel *Eudynamis scolopacea*.

Side 2: Southern Magpie Robin *Copsychus saularis ceylonensis*, Ceylon Black-headed Oriole *Oriolus xanthornus ceylonensis* and White-browed Fantail Flycatcher *Rhipidura aureola*.

26. Marshall, Joe & Elsie. 1978. *The Gibbons*. One 30 cm 33.3 r.p.m. disc, ARA 3. J. W. & C. K. Hardy, 1615 N.W. 14th Avenue, Gainesville, Florida 32605, U.S.A.

Side 2, band 15: Rhinoceros Hornbill *Buceros rhinoceros*, barbet sp. Capitonidae, Indian Hill Myna *Gracula religiosa*, sunbird sp. Nectariniidae.

27. Marshall, Joe T. 1978. *Systematics of Smaller Asian Night Birds based on Voice*. One 30 cm 33.3 r.p.m. disc, AOU 2, supplement to Ornithological Monographs no. 25, 58 pp. The disc and monograph are sold together by Glen E. Woolfenden, Assistant to the Treasurer A.O.U., Department of Biology, University of South Florida, Tampa, Florida 33620, U.S.A.

55 recordings: 34 of 17 species of owl of the genus *Otus*; 11 of 5 species of frogmouth of the genus *Batrachostomus*; 2 of 2 species of nightjar of the genus *Eurostodopus*, and 8 of 4 species of nightjar of the genus *Caprimulgus*. The 43 recordings of the following 39 forms were made in the Oriental region.

Side 1: Rufescent Scops-owl *Otus rufescens*, Mountain Scops-owl *Otus spilocephalus siamensis*, vulpes, vanderwateri and hambroeki, Asian Common Scops-owl *Otus sunia distans* and rufipennis, Ryukyu Scops-owl *Otus elegans botelensis*, Sulawesi Scops-owl *Otus manadensis*, Simeulue Scops-owl *Otus umbra*, Mantanani Scops-owl *Otus mantanensis romblonis* and mantanensis, Moluccan Scops-owl *Otus magicus beccarii*, magicus and albiventris.

Side 2: Mentawai Scops-owl *Otus mentawi*, Collared Scops-owl *Otus bakkamoena lettia*, "cnephaeus" and "hypnodes", Luzon Collared Scops-owl *Otus megalotis*, Wallace's Giant Scops-owl *Otus silvicola*, Philippine Frogmouth *Batrachostomus septimus*, Gould's Frogmouth *Batrachostomus stellatus*, Hodgson's Frogmouth *Batrachostomus hodgsoni*, Long-tailed Frogmouth *Batrachostomus cornutus*, Javan Frogmouth *Batrachostomus javensis continentalis*, affinis and javensis, Eared Nightjar *Eurostodopus macrotis*, Capped Nightjar *Eurostodopus temminckii*, Migratory Nightjar *Caprimulgus indicus*, Long-tailed Nightjar *Caprimulgus macrurus manillensis*, bimaculatus and atripennis, Savannah Nightjar *Caprimulgus affinis*, Little Indian Nightjar *Caprimulgus asiaticus asiaticus*, Salvadori's Nightjar *Caprimulgus pulchellus*.

28. Kabaya, Tsuruhiko. 1978. *Birds of the World II: India*. One 30 cm 33.3 r.p.m. stereo disc, SKS (H) 2008. King Record Co. Ltd., Japan.

Side 1: Bar-headed Goose *Anser indicus*, Sarus Crane *Grus antigone*, Rose-ringed Parakeet *Psittacula krameri*, Grey Francolin *Francolinus pondicerianus*, Red-wattled Lapwing *Vanellus indicus*, White-cheeked Bulbul *Pycnonotus leucogenys*, Large Pied Wagtail *Motacilla maderaspatensis*, Red-vented Bulbul *Pycnonotus cafer*.

Side 2: White-cheeked Bulbul, Red-vented Bulbul, Indian (Common) Myna *Acridotheres tristis*, Common Pariah Kite (Black Kite) *Milvus migrans*, Rose-ringed Parakeet, Koel *Eudynamis scolopacea*, House Crow *Corvus splendens*, Jungle Crow *Corvus macrorhynchos*, Grey Francolin, Large Pied Wagtail, Red-rumped Swallow *Hirundo daurica*, Peafowl *Pavo cristatus*, Tailorbird *Orthotomus sutorius*, Sarus Crane, Brown Fish Owl *Ketupa zeylonensis*, White-breasted Kingfisher *Halcyon smyrnensis*, Bar-headed Goose, Red-wattled Lapwing, Spoonbill *Platalea leucorodia*, Painted Stork *Ibis leucocephalus*.

29. Kabaya, Tsuruhiko. 1979. *Birds of the World IV: Taiwan, Thailand and Malaysia*. One 30 cm 33.3 r.p.m. stereo disc, SKS (H) 2014. King Record Co. Ltd., Japan.

Side 1 consists of various atmosphere recordings and includes the following species: Hwa-mei *Garrulax canorus*, Chinese Bulbul *Pycnonotus sinensis*, White-eared Sibia (Formosan Sibia) *Heterophasia auricularis*, Muller's Barbet *Megalaima oorti*, Indian Pied Hornbill *Antracoceros malabaricus*, White-rumped Shama *Copsychus malabaricus*, Red-whiskered Bulbul *Pycnonotus jocosus*, Magpie Robin (Dyal) *Copsychus saularis*, Blue-throated Bee-eater *Merops viridis*. The diagram on page 5 of the leaflet labelled side 2 refers in fact to side 1.

Side 2 consists of individual species, each one introduced first in English and then in Japanese. Hwa-mei, Chinese Bulbul, Taiwan Bulbul (Formosan Bulbul) *Pycnonotus taiwanus*, White-eared Sibia, Black Bulbul *Hypsipetes madagascariensis*, Muller's Barbet, Little Spider Hunter *Arachnothera longirostris*, Gaudy Barbet *Megalaima mystacophanos*, Fairy Bluebird *Irena puella*, Barn Owl *Tyto alba*, Open-billed Stork *Anastomus oscitans*, Red-whiskered Bulbul, Magpie Robin, White-rumped Shama, Blue-throated Bee-eater, Red Jungle Fowl *Gallus gallus*, Indian Pied Hornbill, White-collared Kingfisher *Halcyon chloris*, Black-naped Oriole *Oriolus chinensis*, Spotted Dove *Streptopelia chinensis*.

30. Palmér, S. & Boswall, J. 1981 (although dated 1980). *A Field Guide to the Bird Songs of Britain and Europe*. One 30 cm 33.3 r.p.m. disc, RFLP 5015. Swedish Broadcasting Corporation, Stockholm 105 10, Sweden.

Includes a White-breasted Kingfisher *Halcyon smyrnensis* and a Tickell's Thrush *Turdus unicolor* recorded in Nepal by C. Chappuis.

White, T. C. In prep. *A Field Guide to the Bird Songs of South-east Asia*. Offers of tape material to T. C. White, 6c Rosebery Avenue, Harpenden, Herts. AL5 2PQ, Britain.

Acknowledgements: Ron Kettle, the B.L.O.W.S.'s curator, cast his eagle eye over an earlier draft detecting a number of sins of commission and omission. Thanks are also due to James Gulledge, Kees Hazevoet, Derek Holmes, Tsuruhito Kabaya, Joe T. Marshall, H. Elliott McClure, Pilai Poonswad, G. V. Poulter, David Wells and T. C. White.

References:

- Bertram, B. 1970. The vocal behaviour of the Indian Hill Mynah, *Gracula religiosa*. *Anim. Behav. Monographs* 3: 79-192.
- Boswall, J. 1973. A Discography of Bird Sound from the Oriental Zoogeographical Region. *Bull. Brit. Orn. Cl.* 93(4): 170-172.
- 1974. A bibliography of wildlife discographies. *Recorded Sound* 54: 305.
- 1979. A supplementary bibliography of wildlife discographies. *Recorded Sound* 74-75: 72.
- & Kettle, R. 1979. A revised list of wildlife sound libraries. *Recorded Sound* 74-75: 70-72, reprinted in *Biophon* 7(1): 3-6.
- Collias, N. & Joos, M. 1953. The spectrographic analysis of the sound signals of the domestic fowl. *Behaviour* 5: 175-189.
- Gulledge, James. 1979. The library of natural sounds at the Laboratory of Ornithology, Cornell University. *Recorded Sound* 74-75: 38-41.
- King, B., Woodcock, M. & Dickinson, E. C. 1975. *A Field Guide to the Birds of South-east Asia*. Collins: London.
- Vaurie, C. 1959. *The Birds of the Palearctic Fauna: Passeriformes*. Witherby, London.
- Addresses:* Jeffery Boswall, c/o British Library of Wildlife Sounds, B.I.R.S., 29 Exhibition Road, London SW7 2AS. Wendy Dickson, Foxbury Cottage, Lesbury, Alnwick, Northumberland NE66 3BA.

©British Ornithologists' Club 1981.

Notes on eggs of the Hook-billed Kite *Chondrohierax uncinatus*, including two overlooked nesting records

by Lloyd F. Kiff

Received 7 October 1980

During routine study of the Western Foundation of Vertebrate Zoology (WFVZ) egg collection, I discovered 2 clutches of Hook-billed Kite *Chondrohierax uncinatus* eggs, misidentified by the original collector; and since there are few published nesting records for this species and even fewer descriptions of its eggs, it seems worthwhile recording them.

The eggs were collected by or (probably) for the professional collector, Frank B. Armstrong, in the vicinity of Ciudad Victoria, Tamaulipas (23° 44'N, 99° 08'W), in Mexico on 14 May 1908 (WFVZ no. 120, 613) and 2 May 1910 (WFVZ no. 16,292). The former set came to the WFVZ as a part of the Philadelphia Academy of Natural Sciences collection, whereas the latter set was most recently in the Col. L. R. Wolfe collection.

Both sets were identified by Armstrong as eggs of the Everglade (Snail) Kite *Rostrhamus sociabilis*, a species superficially similar to the Hook-billed Kite in appearance and diet. My reasons for thinking that the eggs are in fact those of the Hook-billed Kite are as follows: (1) there is no evidence that the Snail Kite has ever nested as far north in Mexico as central Tamaulipas (Friedmann *et al.* 1950, Edwards 1972, Peterson & Chalif 1973), but the Hook-billed Kite is at least locally common there (Smith, in press); (2) both Armstrong's clutches were in nests composed of "twigs, roots and bark", 20 and 22 feet off the ground in open woods, similar to the nesting situations

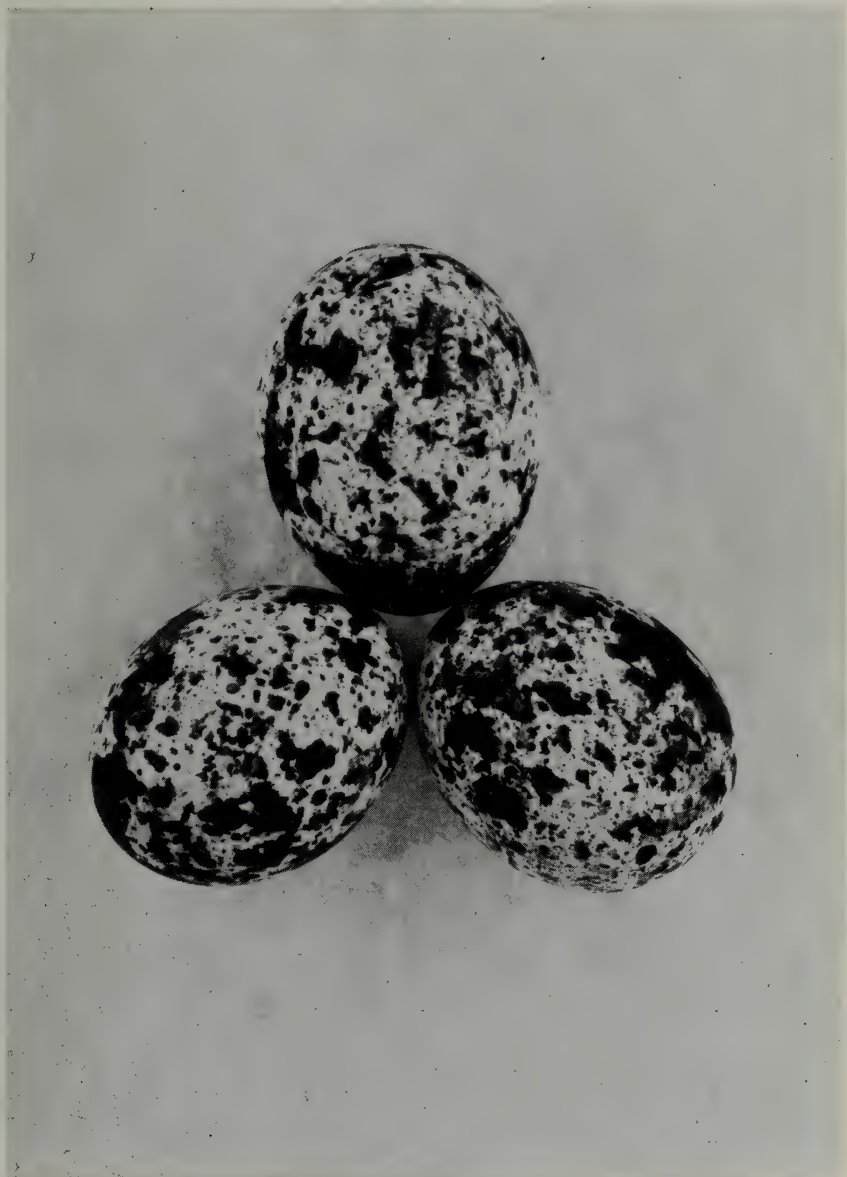


Fig. 1. A Hook-billed Kite *Chondrohierax uncinatus* egg from Oaxaca, Mexico (top) and two probable Hook-billed Kite eggs from Tamaulipas, Mexico (bottom).

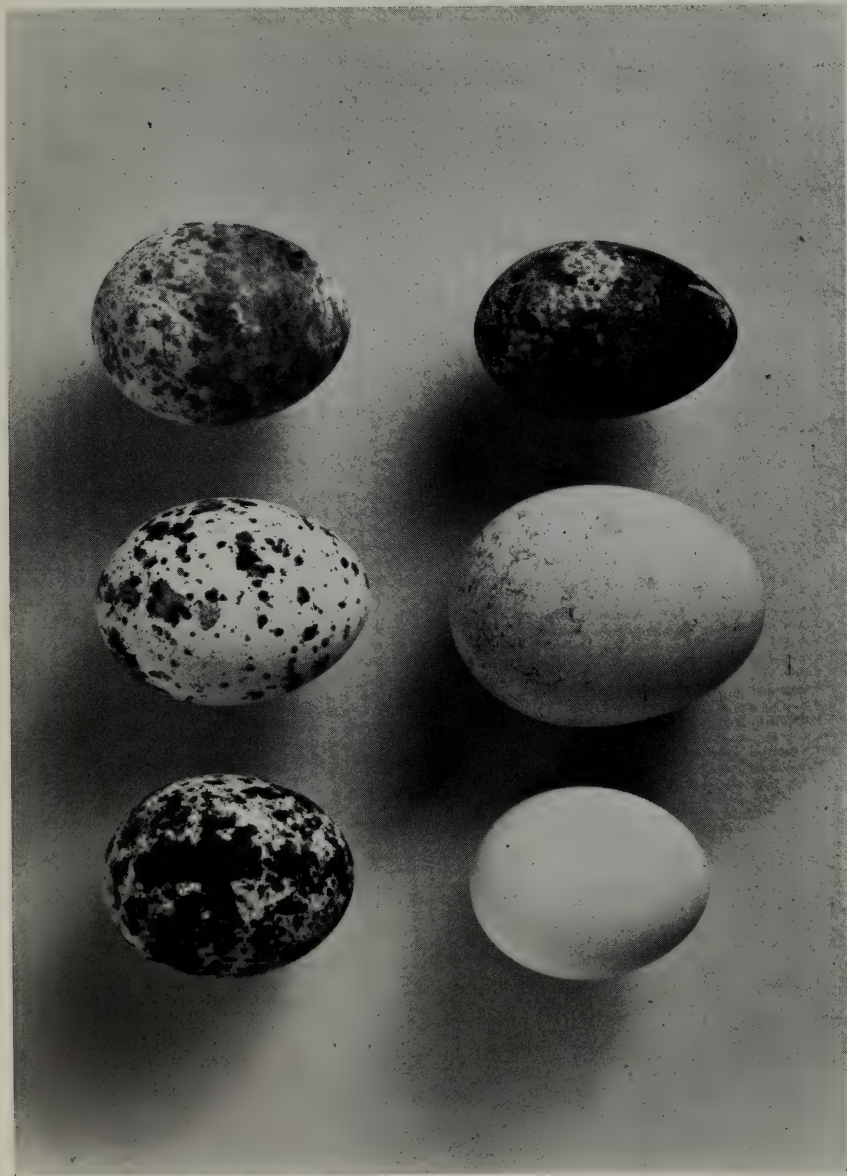


Fig. 2. Eggs of American kites. Top, l to r: *Chondrohierax uncinatus*, *Elanoides forficatus*, *Rostrhamus sociabilis*. Bottom, l to r: *Ictinia mississippiensis*, *Leptodon cayanensis*, *Elanus leucurus*.

described for Hook-billed Kites by Haverschmidt (1964, 1968), Fleetwood & Hamilton (1967), Delnicki (1978), Smith (in press) and Rowley (in press), but quite different from the details of nest heights, materials and habitat given for the Snail Kite by Bent (1937) and Brown & Amadon (1968); (3) Armstrong's eggs are virtually identical to unquestioned Hook-billed Kite eggs in the WFVZ collection, but differ from those in a large series of Snail Kite eggs.

The eggs of WFVZ no. 120,613 measure 44.0×35.4 and 42.5×35.3 mm, with empty dry shell weights of 2.18 and 2.16 g, respectively. Equivalent measurements of WFVZ no. 16,292 are 46.9×37.6 and 44.3×36.2 mm, with empty dry shell weights of 2.85 and 2.21 g, respectively. These measurements agree closely with those of a Hook-billed Kite egg (WFVZ no. 21,331) collected near Tapanatepec, Oaxaca, Mexico ($16^{\circ} 20'N$, $94^{\circ} 10'W$) by Rowley (in press); that egg measures 47.4×36.6 mm, with an empty dry shell weight of 2.44 g. The only other known museum clutch of Hook-billed Kite eggs was collected in Surinam and the eggs measured 43.4×36.9 and 46.6×37.3 mm (Haverschmidt 1968).

One egg from each of Armstrong's 2 clutches is shown in the Plate accompanying, together with the Hook-billed Kite egg from Oaxaca mentioned above. All are very similar in colour, being dull white with heavy spots and blotches of dark chocolate brown. They are also identical in colour to eggshell fragments taken from 3 other Hook-billed Kite nests at Tamaulipas in 1980 by T. Smith and to a second egg taken by Rowley at Oaxaca that was broken when found.

Snail Kite eggs are similar in size (65 eggs of the Florida race, *plumbeus*, averaged 44.2×36.3 mm (Bent 1937); 12 eggs of the Mexican race, *major*, in the WFVZ collection average 44.2×36.0 mm), but differ in both colour and shape from Hook-billed Kite eggs (see Plate). Snail Kite eggs are marked to varying degrees with spots and splotches of light, buff, and medium brown, but none of the specimens in the WFVZ series of 56 clutches bears the dense chocolate brown markings that are evidently typical of Hook-billed Kite eggs. In addition, Snail Kite eggs in the WFVZ series range in shape from subelliptical to short subelliptical (all shape designations follow Preston in Palmer 1962: 13), whereas all the presumed Hook-billed Kite eggs are nearly elliptical in shape.

Among American kites, the eggs of the Swallow-tailed Kite *Elanoides forficatus* show most similarity to those of the Hook-billed Kite in size (a Florida sample of 50 averaged 46.7×37.4 mm - Bent 1937), shape (elliptical to short subelliptical), and shade of brown markings, although they are rarely as heavily marked (see Plate). It is, however, unlikely that Armstrong or his collectors would have misidentified that striking species. Furthermore, the Swallow-tailed Kite is not known ever to have nested in northern Mexico, even during the era when it occurred as a breeding species in Texas and portions of the United States Midwest (Friedmann *et al.* 1950).

As suggested by Haverschmidt (1964), the 2 eggs attributed to the Hook-billed Kite by Schönwetter (1961) are probably mis-identified, since their measurements, averaging 53.6×40.5 mm, are so much greater than authentic examples. In addition, an accompanying illustration of one of the eggs (Schönwetter: Plate 6, fig. 8) shows that it is short oval in shape and white with a few reddish-brown spots, mostly at the large end. In these particulars,

Schönwetter's purported Hook-billed Kite eggs closely resemble those of the larger Grey-headed Kite *Leptodon cayanensis* described by him (op. cit.) and by Brown & Amadon (1968), as well as 2 sets of eggs of the latter species in the WFVZ collection. The WFVZ eggs are white with a few medium brown and purplish brown scrawls and spots, mostly on the larger ends (see Plate). Their shapes range from short oval to long oval, and they measure 54.3×40.6 and 53.7×43.7 mm with empty dry shell weights of 4.13 and 4.43 g, respectively.

The WFVZ Grey-headed Kite clutches were taken in Trinidad for G. D. Smooker, and those mentioned by Schönwetter (1961) and Brown & Amadon (1968) were presumably acquired by the same collector. Two additional clutches collected in Trinidad for Smooker and identified by him as Hook-billed Kite eggs are also in the WFVZ collection, and another such clutch is in the collection of the Zoological Museum of the University of Helsinki (no. 9603). However, all 3 are probably eggs of the Grey-headed Kite, since they are similar to those of the WFVZ *Leptodon* clutches in shape, colour, and size.

Although Smooker's Trinidad kite sets were collected between 1929 and 1933, they were not mentioned in the long paper that he co-authored on the nesting habits of the birds of Trinidad and Tobago (Belcher & Smooker 1934-1937). When asked about this years later, Smooker replied (letter to Col. L. R. Wolfe, 3 August 1953) that "The eggs of *Chondrohierax uncinatus* and *Odontriorchis palliatus* (= *Leptodon cayanensis*) were not described in the paper you mention because at that time I was not quite certain of their identity and therefore thought it best to omit them".

Finally, there appears to be no basis for the comment by Brown & Amadon (1968) that the eggs of the Hook-billed Kite resemble those of *Elanus leucurus*, since they differ from all members of the genus *Elanus* in all fundamental details, including size, shape, and colour of markings.

Acknowledgments: I appreciate comments on the manuscript by Tom Smith. I am grateful to Clark Sumida for preparing the figure, and to J. Terhivuo for providing me with details on the Smooker kite eggs in the University of Helsinki collection. This note was supported by the Western Foundation of Vertebrate Zoology.

References:

- Belcher, C. & Smooker, G. D. 1934-1937. Birds of the colony of Trinidad and Tobago (in 6 parts). *Ibis* Ser 13(4): 572-595, et seq.
- Bent, A. C. 1937. Life histories of North American birds of prey. Pt. 1. *Bull. U.S. Nat. Mus.* 167.
- Brown, L. & Amadon, D. 1968. Hawks, Eagles, and Falcons of the World. McGraw-Hill: New York.
- Delnicki, D. 1978. Second occurrence and first successful nesting record of the Hook-billed Kite in the United States. *Auk* 95: 427.
- Edwards, E. P. 1972. A Field Guide to the Birds of Mexico. E. P. Edwards, Sweet Briar, Virginia.
- Fleetwood, R. J. & Hamilton J. L. 1967. Occurrence and nesting of the Hook-billed Kite (*Chondrohierax uncinatus*) in Texas. *Auk* 84: 598-601.
- Friedmann, H., Griscom, L. & Moore, R. T. 1950. Distributional check-list of the birds of Mexico. Pt. 1. *Pacific Coast Avifauna* No. 29.
- Haverschmidt, F. 1964. Beobachtungen an *Chondrohierax uncinatus* (Temminck) in Surinam. *J. Orn.* 105: 64-66.
- 1968. Birds of Surinam. Oliver and Boyd: Edinburgh.
- Peterson, R. T. & Chalif, E. L. 1973. A Field Guide to Mexican Birds and Adjacent Central America. Houghton Mifflin: Boston.

- Palmer, R. S. (Ed) 1962. *Handbook of North American Birds*. Vol. 1. Yale Univ. Press: New Haven, Connecticut.
- Rowley, J. S. In press. Breeding records of land birds in Oaxaca, Mexico. *Proc. Western Found. Vert. Zool.*
- Schönwetter, M. 1961. *Handbuch der Oologie*. Pt. 3. Akademie-Verlag: Berlin.
- Smith, T. In press. Nests and young of two rare raptors from Mexico. *Biotropica*.

Address: Lloyd F. Kiff, Western Foundation of Vertebrate Zoology, 1100 Glendon Avenue, Los Angeles, California 90024, U.S.A.

©British Ornithologists' Club 1981.

Breeding and other observations on the Slaty Egret *Egretta vinaceigula*

by R. J. Dowsett

Received 14 October 1980

The specific status of the Slaty Egret *Egretta vinaceigula* has only recently been established with certainty, and many aspects of its biology are quite unknown. In particular, there has been no information on its breeding behaviour (Hancock & Elliott 1978), with no nest hitherto observed, although Benson, Brooke & Irwin (1971) mention sighting an unapproachable colony on the Chobe River in northern Botswana in May 1971. Thus one of my aims during a visit to the swamps of the Okavango region of Botswana in 1975 was to search for nests.

BREEDING IN BOTSWANA

I spent 3 days in June visiting, by boat, parts of the Moremi Wildlife Reserve, in company with P. A. Smith and J. Steen. On 15 June, Smith took me to a mixed heronry on Xakanaxa *lediba* (=lagoon), at 19° 11'S, 23° 23'E. There was little breeding activity, but we did find an occupied nest of the Slaty Egret. As our boat approached, one of the adults would slip off the nest, creep through the thicket of wild fig, *Ficus verruculosa*, which the heronry occupied, and then fly off. A second adult was sometimes nearby. There were 3 pulli in the nest; 2 were rather larger than the third and they would usually climb off into the thicket before we were near.

Two others, apparently a pair, were often seen on the other side of the colony, but we did not find their nest. A further 8 Slaty Egrets were present in the *Ficus* at dusk on 15 June, and elsewhere in Moremi we saw 4 single birds loosely associating together at a pool. During the 3 days I spent in the Okavango swamps I saw no Black Egrets *E. ardesiaca*.

Accounts of the Xakanaxa heronry have been published by Berry (1968), Child (1972), Fraser (1971) and Steyn (1970). (The spelling of this locality name has varied, but P. A. Smith tells me that the official vernacular spelling is as I have it here.) These authors mention several species of water birds breeding there (some of which I also found in June), but no Slaty Egrets, and I am unaware of any observations of this species since my own. Their visits to the heronry were later in the year than mine, which may explain why they failed to find Slaty Egrets if they usually breed about May and June.

DESCRIPTION OF NEST AND NESTLING

The extensive thicket of *Ficus verruculosa* in which the Xakanaxa heronry

is situated is on the edge of a large lagoon. The nest was placed just below the canopy, some 2 m above water level, and was 32 cm in diameter.

The 2 larger nestlings were active and were not handled. The smallest nestling was examined in the hand when the nest was first found, and was collected as a specimen on 16 June when we had confirmed the identity of the nest owner. It is now preserved in the collection of the National Museum of Botswana at Gaborone.

The feather tracts of the nestling are mostly covered with long sooty black down. The feather sheaths on the wings and tail are starting to sprout feathers, again sooty black. Some of the down on the belly is greyer than that elsewhere. On the ventral side there are feather tracts down both flanks, with a broad median apterium. Dorsally, there is a thick tuft of down on the crown, developing into two caudal tracts, a spinal tract and two long humeral tracts.

The nestling had the iris coloured mid-brown; bill pinkish horn, extreme tip dark; tarsus and toes pea green in front, with chrome yellow soles and hind tarsus; all the body skin greenish, with the gular region yellowish green; toe nails pale horn. The specimen was subsequently prepared as a study skin out of formalin, and within one month the tarsi had become blackish and much thinner than in life. In a mixed heronry the thick, pea green legs and yellowish throat skin should identify a very young Slaty Egret. Measurements of the dried-out specimen are: culmen (exposed) 28 mm and tarsus 31 mm. In the flesh these measured respectively 30 and 37 mm.

This specimen has been compared to a rather older nestling of Black Egret in the collection of the Livingstone Museum, Zambia. The bill and tarsus of the Black Egret are recorded as black on the label, but the feet show the yellow colour which is also present in adults. No other important differences are obvious at this early age, but it is interesting that leg colours do differ, as in adults of the two species.

COMPARISON OF SLATY EGRET AND BLACK EGRET

My own observations in Botswana and Zambia support the contention of Benson, Brooke & Irwin (1971) and Vernon (1971) that there are consistent differences in morphology and behaviour between the Slaty and Black Egrets. Benson, Brooke & Irwin wrote at a time when only 3 specimens of Slaty Egret were known. Subsequently, Irwin (1975) has described another 2 specimens and suggested further diagnostic morphological characters. Two specimens have since been obtained in Zambia, and are in the collection of the Livingstone Museum. One is a non-breeding ♀ collected at Maala, on the Kafue River near Namwala (Southern Province), on 23 June 1974 (J. F. R. Colebrook-Robjent); the other is a non-breeding ♂ from 32 km northwest of Mongu in Western Province, obtained on 23 August 1975 (T. O. Osborne).

Colour differences

All 7 specimens now known, together with numerous field observations, confirm the considerable variation in the colour of the underparts of the Slaty Egret. There is also some variation in the length of the occipital plumes, but 11 of the 12 birds I watched closely in the Okavango in June 1975 had short plumes – most of them very short – although one very dark coloured adult had very long plumes. The colour of body plumage at Okavango

varied quite extensively, but all were predominantly slate in colour. In my experience even the darkest Slaty Egret is never as black as Black Egrets, but F. Dowsett-Lemaire and I once saw at Lochinvar National Park in Zambia on 12 August 1978 a Black Egret which was as pale slate-grey as any Slaty. The bird was a typical Black Egret in all other respects: it lacked any vinous or buffy throat patch, had black legs and yellow feet, and hunted food by "umbrella-ing" with its wings. Although plumage differences between the two species are usually diagnostic in the field, care does need to be exercised, and further observations are needed to determine if there are any seasonal changes in the colour of plumage, legs and bill of Slaty Egrets.

Milewski (1976) correctly suggested that the most useful feature for identifying the Slaty Egret is the chrome yellow tarsus and foot, but he was wrong to state that this character had not been pointed out before, as it has been well-known to observers in Zambia and was stressed by Berry (1974). The yellow-green tarsal colour of all collected specimens (Benson, Brooke & Irwin 1971, Irwin 1975) confirms that this is a consistent character, though one which is subject to *post mortem* change.

Weights

Weights are now available for 5 Slaty Egrets, namely 2 that I caught for ringing in Zambia at Lochinvar, the 2 Zambian specimens and one from the Okavango quoted by Milewski (1976). The 4 Zambian birds range 250–297 g, mean 275 g, while the Okavango bird weighed 340 g. In comparison, the weights of Black Egrets caught for ringing at Lochinvar by J. D. Mbewe and A. S. Muyundu were 270–390 g, mean 324 g ($n=7$), while a specimen from Botswana is quoted by Benson, Brooke & Irwin (1971) as weighing 14½ oz (=c. 410 g). These data suggest that Slaty Egrets average somewhat lighter than Black Egrets. On the basis of wing, culmen and tarsus measurements of the few specimens examined, Benson, Brooke & Irwin (1971) and (Irwin 1975) had suggested that the Slaty is consistently the smaller species.

Feeding methods

Ways in which the feeding habits of Slaty and Black Egrets differ have been suggested by Vernon (1971) and Milweski (1976), and our observations in Zambia generally are in accord. I know of no proven instance of Slaty Egrets using the "umbrella" method of prey hunting so typical of Black Egrets, and Irwin (1975) has suggested structural differences in their wings to explain this behaviour.

Outside the immediate vicinity of a heronry, Slaty Egrets are typically seen at pans and pools on floodplains. Although they do overlap with Black Egrets on the shallow edge of floodwaters, they are rarely to be seen in the deeper waters fished by Black Egrets. The nestling Slaty Egret in Botswana regurgitated 4 small fish when first handled, and when collected the next day its stomach contained remains of at least 8 more small fish, each 30–40 mm in length.

Voice

Slaty Egrets are quiet birds, although an adult flushed from the nest did utter a few heron-like squawks while perched and watching us from a distance. Black Egrets frequently utter a similar call when feeding communally.

DISTRIBUTION OF THE SLATY EGRET

The distribution of the Slaty Egret as then known was mapped by Snow (1978: 20). Recent observations extend its range northwards in Zambia to the Bangweulu swamps (Berry 1974, D. R. Aspinwall) and Nchelenge District at Kabendwe (8° 28'S, 29° 17'E), almost on the Zaire border (Aspinwall 1978). In Zambia the species is most often reported from the floodplains of the Kafue Flats (Blue Lagoon and Lochnivar National Parks) and of the Liuwa Plain National Park.

It occurs widely in the wetlands of northern Botswana, with one sighting as far south as Maun (Milewski 1976), and there is a specimen from Kabuta in the Caprivi Strip (Smithers 1964). A single Slaty Egret was reported from 2 localities near Salisbury in Zimbabwe in September and November 1978 (Evans 1979, Tree 1979). However, 2 sight records from Malawi (Day & Hanmer 1978) are not entirely convincing, in particular since neither refers to the conspicuously yellow tarsi. The status of the 2 specimens (including the type) from Potchefstroom in the Transvaal of South Africa in 1895 is unclear (Benson, Brooke & Irwin 1971), there being no other records south of northern Botswana.

Up to the end of 1978 there were some 55 fully acceptable dated records from Zambia, for the following months: Jan. 4, Feb. 1, Mar. 2, Apr. 2, May 4, June 6, Jul. 8, Aug. 4, Sep. 4, Oct. 7, Nov. 10, Dec. 3. Most floodplains are difficult of access during the rains, between about December and April, but I lived continuously in one key area (Lochnivar National Park) for 2½ years 1968–71; other ornithologists to have lived there are R. J. Douthwaite and T. O. Osborne. Our continuous observations over several years provide no evidence of substantial movement by the Zambian population. However, Slaty Egrets have been observed during the rains in places that are completely dry for much of the year. Conversely, increased numbers during the dry season on the Liuwa Plain and the Kafue Flats (when parties of up to 30 are not uncommon) may suggest some regularity of movement, perhaps as post-breeding dispersal. Published dates from Botswana are even more influenced by the seasonal movements of ornithologists.

There is so far no evidence of the Slaty Egret breeding in Zambia, although it may be expected to do so. Peak numbers of Black Egrets on the Kafue Flats are during the rains, but the 2 species may breed at much the same time of year, all egg-laying records for Black Egret in Zambia (Benson, Brooke, Dowsett & Irwin 1971 and subsequent data) being from March to June.

Irwin (1975) has suggested that the Slaty Egret may be a relict species with a naturally declining population. However, its range may well be found to be more extensive than hitherto supposed, as more observers realise the distinctness of its field characters. On present evidence its distribution is strangely limited, and it could well be especially vulnerable to land-use alteration, such as the dams affecting flood levels on the Kafue Flats in Zambia and projects to utilise the waters of the Okavango swamps in Botswana. It should be considered an endangered species.

Acknowledgments: My visit to Botswana was requested by U.N.D.P.'s Investigation of the Okavango Delta project (through Mr. H. M. Ernest), and I received much-appreciated assistance there from Messrs. W. L. Astle, P. A. Smith and J. Steen. Authority to collect a nestling Slaty Egret was obtained through the co-operation of Dr. W. von Richter of the Botswana Department of Wildlife and National Parks. I am grateful to those observers in Zambia who have submitted records. Messrs. C. W. Benson, R. J. Douthwaite and M. P. Stuart Irwin have kindly commented on a draft of this paper.

References:

- Aspinwall, D. R. 1978. Bird notes from northern Nchelenge District. *Bull. Zambian Orn. Soc.* 10: 1-4.
- Benson, C. W., Brooke, R. K., Dowsett, R. J. & Irwin, M. P. S. 1971. *The Birds of Zambia*. Collins: London.
- Benson, C. W., Brooke, R. K. & Irwin, M. P. S. 1971. The Slaty Egret *Egretta vinaceigula* is a good species. *Bull. Brit. Orn. Cl.* 91: 131-133.
- Berry, G. F. 1968. Short notes on birds breeding in the Moremi Wildlife Reserve, Botswana 10th-20th September 1968. *Bokmakierie* 20: 97.
- Berry, P. S. M. 1974. Slaty Egret *Egretta vinaceigula* in the Bangweulu swamps. *Bull. Zambian Orn. Soc.* 6: 49.
- Child, G. 1972. A survey of mixed "heronries" in the Okavango delta, Botswana. *Ostrich* 43: 60-62.
- Day, D. H. & Hanmer, D. B. 1978. (Letter). *Bokmakierie* 30: 108.
- Evans, P. J. 1979. (Letter). *Honeyguide* 97: 37.
- Fraser, W. 1971. Breeding herons and storks in Botswana. *Ostrich* 42: 123-127.
- Hancock, J. & Elliott, H. F. I. 1978. *The Herons of the World*. London Editions: London.
- Irwin, M. P. S. 1975. Adaptive morphology in the Black and Slaty Egrets *Egretta ardesiaca* and *Egretta vinaceigula*, and relationships within the genus *Egretta* (Aves: Ardeidae). *Bonn. Zool. Beitr.* 26: 155-163.
- Milewski, A. V. 1976. Feeding ecology of the Slaty Egret *Egretta vinaceigula*. *Ostrich* 47: 132-134.
- Smithers, R. H. N. 1964. *A Check-list of the Birds of the Bechuanaland Protectorate and the Caprivi Strip*. Trustees of the Nat. Museums of Sth. Rhodesia: Salisbury.
- Snow, D. W. 1978. *An Atlas of Speciation in African Non-passerine Birds*. British Museum (Natural History): London.
- Steyn, P. 1970. Journey for birds. *Bokmakierie* 22: 86-92.
- Tree, A. J. 1979. Recent observations in Mashonaland. *Honeyguide* 97: 18-24.
- Vernon, C. J. 1971. Observations on *Egretta vinaceigula*. *Bull. Brit. Orn. Cl.* 91: 157-159.
- Address: R. J. Dowsett, Nyika National Park, Private Bag Chilinda, P.O. Rumphi, Malawi.
- ©British Ornithologists' Club 1981.

Observations on some Palaearctic land birds in Ghana

by J. Frank Walsh and L. G. Grimes

Received 15 November 1980

In his classic paper on problems of Mediterranean-Saharan migration Moreau (1961) drew attention to the paucity of published evidence for the occurrence of many species of Palaearctic birds in West Africa. This situation began to be rectified with the appearance of major papers from Senegal (Morel & Roux 1966) and Nigeria (Elgood *et al.* 1966). Subsequent information for Nigeria, published in the *Bulletin of the Nigerian Ornithological Society*, was partly used by Moreau (1972) and further data appeared for Senegal (Morel & Roux 1973) and for the Ivory Coast (Brunel & Thiollay 1969, 1970). Over a number of years we kept records of Palaearctic land birds in Ghana, of which the following add to our present knowledge.

Our observations mainly relate to 2 savanna areas; one in the north and one in the south of the country. Data from the northern savanna, especially around Bolgatanga (10° 48'N, 0° 51'W), were collected over 3 seasons (1970-1973) by J.F.W.; that from the Accra Plains in the south, particularly in the area around the University of Ghana at Legon (5° 38'N, 0° 11'W), were collected over several years by L.G.G. Reference is also made to records by M. Wink made during 2 short stays in February and March 1972 and 1973 (Wink 1976) and to the more extensive records of Sutton (1970), Macdonald (1978) and M. Lockwood (in prep.).

In the northern savanna there is one wet season and one long dry season (November to April) with an average rainfall of about 40 inches (1016 mm). On the Accra Plains the average annual rainfall varies from 30 inches (762 mm) near the coast to over 50 inches (1270 mm) inland, but in contrast to the north the rainfall is double peaked with a major peak in May and June and a minor one in September and October. In both areas the rainfall is erratic in timing and quantity, and the dry seasons are severe enough to quickly wither and dry the vegetation. It should perhaps be noted that in northern Ghana rainfall was well below average in 1970 but not in 1971 and 1972, while in the Sahel rainfall was particularly poor in 1971 and 1972 (Winstanley *et al.* 1974).

Of the 24 species discussed below, 8 are previously unreported for Ghana, though all have occurred in both Senegal (Morel & Roux 1973) and Nigeria (Elgood *et al.* 1966, Elgood 1975). These Ghana records provide strong evidence in particular of major wintering by Booted Eagles *Hieraetus pennatus* and Sedge Warblers *Acrocephalus schoenobaenus*, and support Moreau's (1972) view that the paucity of records reflects the shortage of observers, rather than the absence from much of West Africa of many species such as Hobby *Falco subbuteo*, Common Swift *Apus apus*, Pallid Swift *Apus pallidus*, and Reed Warbler *Acrocephalus scirpaceus*.

The records of territorial behaviour and singing add to the data on wintering behaviour. Many Palaearctic passerines exhibit territorial behaviour in their West African winter quarters, many sing to some extent, from occasional sub-song (Bluethroat *Luscinia svecica*) to full song throughout the season (Melodious Warbler *Hippolais polyglotta*). Some, such as the Wood Warbler (*Phylloscopus sibilatrix*) and Willow Warbler (*Phylloscopus trochilus*), appear to be in full song during spring migration, but not to sing fully whilst in winter quarters.

The systematic list follows the order adopted by Serle *et al.* (1977).

SYSTEMATIC LIST

(*first published record for Ghana)

*Montagu's Harrier *Circus pygargus*

Recorded only from the north; one in the White Volta valley on 7 January 1971 and single birds over rice paddies along the Bolgatanga-Tamale road in December 1972, January 1973, February 1972 and 1979, and March 1975. All records refer to male birds, which appear to be almost as common as male Pallid Harriers *Circus macrourus*, in a ratio of 6: 8. Females and immature birds of the 2 species were not distinguished.

*Long-legged Buzzard *Buteo refinus*

A party of 3 birds, all of different phases, considered to be this species was seen by both of us over Abokobi (5° 40'N, 0° 12'W) on the Accra Plains on 30 November 1971.

*Booted Eagle *Hieraetus pennatus*

This eagle is now known to winter regularly in West Africa. It was recorded regularly at Bolgatanga between December and March in each year of J.F.W.'s stay (1970-73). Recently in Upper Volta, J.F.W. has seen it at Ouagadougou in January and at Banfora in March, as well as along the main road from Paga on the Ghana border to Ouagadougou in October, January and March. Light phase birds have turned up occasionally on the Accra

Plains and have been seen by both of us there. Mundy & Cook (1972) have a number of records for Sokoto in Nigeria between January and March.

*European Hobby *Falco subbuteo*

Good sightings at less than 10 m of an adult over an area of burnt grass at Legon on 5 March 1973. B. Smit (*in litt*). had other sightings, in the dry season of 1971/72, which he considered to be this species. J.F.W. saw 3 in the Bafilo area of neighbouring Togo on 12 December 1978 (Cheke & Walsh 1980).

Turtle Dove *Streptopelia turtur*

There are a few records of this species from the north and none from the south. It has been taken at Mole Game Reserve, where an adult and an immature bird were shot on 12 October and 12 November 1971 respectively. A single bird was seen at Bolgatanga in December 1971 and 4 were at Veia Dam for several days in January 1973. The only published record is that of Wink (1976) who recorded a flock of c. 50 on 1 April 1973 near Lawra (10° 37'N, 2° 53'W). The increase in rice cultivation at the Veia Dam may help to concentrate numbers in the future, as Morel & Roux (1973: 538) found in Senegal.

European Cuckoo *Cuculus canorus canorus*

One bird at Pong Tamale on 26 April 1971 is the only savanna record. Macdonald (1978) saw it at New Debiso (6° 38'N, 3° 08'W), in the forest zone, on 8 April 1977.

*Alpine Swift *Apus melba*

On 4 March 1974, groups of c. 30 birds occurred over the Accra Plains with Common Swifts and the Mottled Swift *Apus aequatorialis* and were quite widespread over the western districts of the plains. It is impossible to know whether they were from the Palaearctic, but the date is suggestive. A large group (c. 300 birds) was present with Common Swift and House Martin over Amedzofe (6° 54'N, 0° 24'E) in February 1975 following the re-occurrence of harmattan conditions in the south.

Common Swift *Apus apus*

The autumn passage in the north is extremely small compared with the spring passage. Six were seen at Bolgatanga on 19 August and 20 at Veia Dam on 21 August, then a few others later; while at Tumu, Sutton (1970) only had one record. In contrast the spring records are numerous (latest date at Bolgatanga, 6 June) and invariably occur after storms. At Nandom (10° 50'N, 2° 45'W), Sutton (1970) witnessed a broad front movement involving thousands of swifts. In the south most records fall between February and March but some flocks appear over Legon in December and January, indicating a wintering population. Largest numbers (c. 500) were present on 4 March 1974 following unusual weather, the inter-tropical convergence zone returned southwards to reach the coast owing to a large anticyclone over southern France and Spain (Grimes 1974).

Pallid Swift *Apus pallidus*

Sutton (1970) strongly suspected that it occurred at Tumu with Common Swifts. J.F.W. recorded one among 50 Common Swifts on 29 April 1971, 25 miles north of Tamale and 2 at Mole Game Reserve on 19 December 1971. Macdonald (1978) saw the species at Cape Coast on 30 November 1976 and,

in the company of G. Vanderstichelen and J.F.W., at Tafo on 29 January 1978. These are the only published records from Ghana.

European Bee-eater *Merops apiaster*

Sutton (1970) recorded it in September and May at Tumu and R. B. Payne (*in litt.*) in October 1975 at Mole Game Reserve. These are the only records for the Upper Region of Ghana. Further south J.F.W. saw a flock of 12 feeding over savanna woodland on 3 December 1971 at 7° 45' N, 1° 45' W; 3 were in noticeable wing moult. It is a regular visitor to the western areas of the Accra Plains and there is evidence that numbers have increased since the 1950's. Gass (1963) recorded them occasionally, but they are now regularly seen between November and April, usually in flocks of 5-10 feeding in cassava plantations. About 25 were seen together in the Asukakaw valley (7° 40' N, 0° 17' E), in the cocoa growing area of the Volta Region, by J.F.W. on 11 January 1972.

Sand Martin *Riparia riparia*

Sutton (1970) recorded them at Tumu only in October and in the spring months beginning in February, latest date 21 May. This is also the pattern at Bolgatanga; earliest and latest dates are respectively 18 September and 2 May. In the south, Wink (1976) saw 5 along the Volta river near Akosombo (6° 20' N, 0° 05' E) on 27 February 1972. M. Lockwood (*in litt.*) found Sand Martins roosting regularly with Swallows (1: 100) near Tafo-Akim in January and February 1975, but not in other months.

Swallow *Hirundo rustica*

At Vea Dam, 'European' Swallows have been recorded from mid-September (with *H. rustica lucida*) until mid-October and then very few until early March, after which they become fairly common from mid-April to early May (5 moving east on 16 May near Bolgatanga). In the south the earliest arrivals reach the Plains in late August (Gass 1957). Large numbers arrive in September and roosts occur in reed beds bordering the Densu river on the western edge of the Plains. Most birds leave by late March but on 2 March and 6 April 1973 flocks of c. 30 and c. 10 birds respectively were seen flying purposefully northwest over the University at Legon at about 0800 hours, which suggests that they had come in from off the Gulf of Guinea (see Moreau 1972: 124) on their way north. After a storm on 14 April 1973, c. 100 birds were present with Common Swifts over the hills that skirt the Plains to the north of Accra. In the forested areas it is widely distributed in clearings and towns and along roads. A large roost (c. 20,000 birds) in a sugar cane plantation first located in 1971 near Tafo-Akim was used also in subsequent years; the tight swirling flight of the flock that precedes fall out into the roost at dusk (see Rudebeck 1955) has been observed there. M. Lockwood (*in prep.*) has trapped French and German ringed birds at the Tafo roost and re-trapped her own ringed birds in subsequent years. The data do not support the suggestion in Elgood *et al.* (1966) that most Swallows depart from southern Ghana in late December.

House Martin *Delichon urbica*

At Tumu, Sutton (1970) gained the impression that considerable numbers arrived in October and continued to build up until December, after which they were less numerous. Large numbers, however, have been recorded in late March at Mole Game Reserve. At Pong Tamale three were seen on

28 April with Common Swifts *Apus apus* and Little African Swifts *Apus affinis*. The only observation in the south (3 at Amedzofe (6° 45' N, 0° 24' E)) was made a few days after the re-occurrence of harmattan conditions. Wink (1976) saw 300 on 17 March near Prang (8° 05' N, 0° 24' E) and 5 on 4 April 1973 near Gambaga (10° 33' N, 0° 30' W).

Tawny Pipit *Anthus campestris*

One, very shy, was found in an open arid treeless area covered with tussock grass near Boltgatanga on 26 December 1971. Wink (1976) considered that he saw one on a sandy section of a lagoon east of Accra on 21 February 1973 and Macdonald (1978) reported single birds near the coast at Ankaful on 27 February and on the coast at Nakwa on 21 June 1977. These are the only published records from Ghana and it is surprising that 3 of the four birds were seen on the coast.

Red-throated Pipit *Anthus cervinus*

Many records from mid-November to the end of January in the vicinity of Veia Dam, where flocks of c. 30 birds often formed; much commoner in the north than the Tree Pipit *Anthus trivialis*. On the Accra Plains, Lamm & Horwood (1958) recorded it once with a small flock of *Motacilla flava* sp. and they have turned up occasionally at irrigation dams. Within the forest belt, M. Lockwood has netted the occasional bird at Tafo-Akim near the town's reservoir and on the golf course.

*Blue Rock Thrush *Monticola solitarius*

Regularly seen at the Bongo Hills (10° 54' N, 0° 49' W) during 1971 and 1972, when up to 3 birds ♂, ♀♀ were often seen during a single visit, the 2 females being together. A male was present from November at Mampong Quarry (5° 42' N, 0° 04' E) on the Accra Plains in 2 consecutive years, remaining until mid-March 1971 and the end of February 1972. In 1971 there were 2 males there on 12 and 23 February, song was heard and chasing occurred on the first date, but the birds were well separated during the second visit. Wink (1976) recorded a female at the same quarry on 27 March 1973 which had not been present earlier and was not seen subsequently. The local Cliff-Chat *Myrmecocichla cinnamomeiventris* is resident at the quarry, and the Rock Thrush *Monticola saxatilis* has also been seen there. These records are similar to those from the Gambia (McGregor & Thomson 1965) and Nigeria (Elgood *et al.* 1966) in that the birds were seen on rocky outcrops at low altitudes, the Gambia record actually being at a coastal cliff, whereas the records from Sierra Leone and Liberia are from highland areas (Field 1973).

*Bluethroat *Luscinia svecica*

First seen on 12 November 1972 at Veia Dam, where a male, believed to be *cyaneacula*, was seen in rank vegetation over water. The following day 2 males were seen and the number eventually reached 10 on 3 December. On this date the birds were noticeably more noisy and some chasing occurred; one male gave a subdued but musical song. Birds were in rank grass and thorny vegetation on the bunds and in the ditches separating the paddy fields, and in 2 uncultivated but flooded paddies. They occasionally entered grown rice. Numbers probably remained the same until 7 January, the highest counts being on days when there was much territorial behaviour; on other visits birds were skulking and only a few were located. A male netted on 6 January was considered to be the nominate race. Other species netted

on the same day in the same net were Great Reed Warbler, Savi's Warbler and Sedge Warbler. After the first week in January the paddy dried out rapidly and the Bluethroat numbers dropped, the last being seen on 17 January, though 8 later visits were made. The series of observations in rank vegetation over wet ground closely parallels those of Fry (1966) in Nigeria. The only other record for Ghana is of a male at the Kumasi sewage farm, on 28 January 1973, in rank grass growing up to 2-3 m high beside a polluted stream. Present in the same area were Sedge Warbler, Reed Warbler and a *Cisticola* species. Ashford (1969) netted a similar group of species with a Bluethroat in a patch of spiny weed *Amaranthus spinosus* at the University of Ibadan, Nigeria. The Kumasi record is thus the second from the derived savanna zone.

*Savi's Warbler *Locustella luscinioides*

Three birds were heard giving liquid trills in rank vegetation on wet ground at Veia Dam on 4 January 1973. A specimen of the nominate race (weight 15.0 gm, wing 69 mm), now housed in the British Museum, Tring, was netted at the same place on 6 January. It is unlikely that these birds were overwintering at the site. This is the first record for Ghana and the only record between Senegal and Nigeria. Other species present in the rank vegetation were Sedge Warblers, Bluethroat and Black-backed *Cisticola* *Cisticola eximia*

Sedge Warbler *Acrocephalus schoenobaenus*

Records indicate that Ghana is an important wintering area. The first arrivals (earliest date 24 August 1972) at Veia Dam are skulking and silent and may be more numerous than records suggest. By mid-November 1972 many birds held territories within rice paddies and the high counts of c. 17 and c. 30 birds obtained respectively on 26 November 1972 and 7 January 1973 were possible only because of their marked territorial activity. In mid-January the paddy was cut but birds remained in the area (c. 6 on 2 and 10 February). Two netted on 6 and 7 January 1973 weighed 10.5 and 12.8 gm; one sent to the British Museum was considered to be of the nominate race. At Accra they have been located in *Typha* beds in wetlands and at the edges of irrigation dams. Three birds were caught in the same net on 30 January within a period of 3 hours (weights 10.5, 10.5, 10.8 gm and wings 60, 64 and 64 mm respectively); all had earlier been in song. Other sight records are: 4 on 19 December 1972 at Yeji ferry (8° 17'N, 0° 53'W) where they were in vegetation bordering the Volta lake, which now provides a very extensive habitat for *Acrocephalus* species; 3 at Kumasi sewage farm (6° 42'N, 1° 40'W) on 28 January in rank undergrowth, their calls suggesting that at least 12 may have been present; and at least 6 at Tafo on 29 January 1978, some of them in song, were seen by J.F.W. in the company of M. A. Macdonald and G. Vanderstichelen. Sutton (1970) located Sedge Warblers at Tumu (10° 51'N, 2° 00'W) in February, March and April. Recent records from Upper Volta at latitude 12°N by J.F.W. suggest regular wintering. In Nigeria, Walsh (1971) found evidence for it wintering on Foge Island on Lake Kainji (c. 10° 35'N) and also a movement through the area in April, with stragglers in May. British ringed birds have been recovered in Ghana.

Reed Warbler *Acrocephalus scirpaceus*

One was seen in rank vegetation beside a polluted stream at Kumasi

sewage farm, which also contained Sedge Warblers and a Bluethroat *Luscinia svecica*, on 28 January 1973. On the Accra Plains one was collected in dry thicket within the Botanical gardens of the University on 12 December 1964 (weight 10.0 gm, wing 66 mm) and another on 31 January 1973 (weight 8.6 gm, wing 61 mm) in *Typha* beds which also held Sedge Warblers and the Rufous Cane Warbler *Acrocephalus rufescens*. In Upper Volta at 12°N it occurs on passage in March, but wintering was also noted in 1976–77, one of 4 years during which careful observations were made (J.F.W.). British ringed birds have been recovered in Ghana.

Great Reed Warbler *Acrocephalus arundinaceus*

At the Veia Dam near Bolgatanga 2 were in song on 26 November and 3 on 3 December 1972. They were not heard again, but one (weight 27.0 gm, wing 90 mm) was netted in the same area on 6 January 1973. It was of the nominate race, its tawny buff underparts suggesting a first year bird. Not yet recorded from the Accra Plains but likely to occur in sugar plantations on the eastern edge, as it has been netted near the coast at Lomé in Togo (Robinson 1972). Recent studies by M. Lockwood (in prep.) in the forest region near Tafo-Akim (6° 13'N, 0° 22'W) have shown it to be a regular winter resident, particularly in sugar cane plantations.

Melodious Warbler *Hippolais polyglotta*

There are few records from the north: one near Bolgatanga giving sub-song in January whilst feeding low down in *Mimosa pigra* and a tangle of rank grass; and one at Pong Tamale (9° 40'N, 0° 50'W) on 3 occasions (21 and 26 April and 7 May 1971). On each visit a bird was singing from within the same large *Acacia* and thus might well have been the same bird. In Mole Game Reserve (9° 12'N, 1° 50'W) singing birds were recorded daily in late March by L.L.G. On the Accra Plains it is well distributed in parklands and well-watered gardens, and on inselbergs. Most birds arrive in mid-October (earliest date 30 September) and song may be heard regularly from the end of October (some are in song earlier) through to early April. In mature gardens, birds appear to hold territories from mid-January, for song is heard from the same bush or tree each day. In less hospitable areas birds are heard irregularly, which suggests that some do not hold territories.

Chiffchaff *Phylloscopus collybita*

Wink (1976) did not realise that his record was the first for Ghana. At Yeji on 16 March 1972 he netted one which was moulting on head, breast, primaries and secondaries. He also recorded one in song on 21 February 1973 in a thicket clump east of Accra.

Wood Warbler *Phylloscopus sibilatrix*

The only records from the north involve birds apparently on passage in spring 1971. A few were present in tall trees at Pong Tamale from at least 28 March until 26 April and also one was seen there on 6 May. Those in April were present with large numbers of Willow Warblers *Phylloscopus trochilus* which departed between 3 and 10 April; both species were in song. Singing Wood Warblers have been recorded on several occasions in March and April in well wooded areas of the Accra Plains and also along the edges of forest reserves north of the Plains. The earliest record for Accra is 29 November 1973.

Acknowledgements: We are grateful to our correspondents, and especially to Mrs M. Lockwood. Mr G. Vanderstichelen accompanied us on many memorable field trips.

References:

- Ashford, R. W. 1969. Two species new to Ibadan, and associated records. *Bull. Niger. Orn. Soc.* 6: 30-31.
- Brunel, J. & Thiollay, J. 1969. Liste préliminaire des oiseaux de Côte d'Ivoire. *Alanda* 37: 230-254, 315-337.
- 1970. Liste préliminaire des oiseaux de Côte d'Ivoire (Supplément). *Alanda* 38: 72-73.
- Cheke, R. A. & Walsh, J. F. 1980. Bird records from the Republic of Togo. *Malimbus* 2: 112-120.
- Elgood, J. H. 1975. The new Nigerian checklist. *Bull. Niger. Orn. Soc.* 11: 68-73.
- Elgood, J. H., Sharland, R. E. & Ward, P. 1966. Palaearctic migrants in Nigeria. *Ibis* 108: 84-116.
- Field, G. D. 1973. Ortolan and Blue Rock Thrush in Sierra Leone. *Bull. Brit. Orn. Cl.* 93: 81-82.
- Fry, C. H. 1966. Status of the Bluethroat in Nigeria. *Bull. Niger. Orn. Soc.* 3: 98-99.
- Gass, M. D. I. 1957. Some migrant birds of Ghana. *Nigerian Field* 22: 166-168.
- 1963. The Bee-eaters of Ghana. *Nigerian Field* 28: 31-34.
- Grimes, L. G. 1974. Weather conditions in temperate latitudes and the occurrence of Alpine and Mottled Swifts at Accra. *Bull. Niger. Orn. Soc.* 10: 38-39.
- Lamm, D. W. & Horwood, M. 1958. Species recently added to the list of Ghana birds. *Ibis* 100: 175-178.
- Macdonald, M. A. 1978. Records of Palaearctic migrants in Ghana. *Bull. Niger. Orn. Soc.* 14: 66-70.
- McGregor, I. A. & Thomson, A. L. 1965. Blue Rock-Thrush *Monticola solitarius* in the Gambia. *Ibis* 107: 401.
- Moreau, R. E. 1961. Problems of Mediterranean-Saharan migration. *Ibis* 103a: 373-427, 580-623.
- 1972. *The Palaearctic-African Bird Migration Systems*. Academic Press: London and New York.
- Morel, G. & Roux, F. 1966. Les migrateurs paléarctiques au Sénégal. *Terre et Vie* 113: 19-72, 143-176.
- 1973. Les migrateurs paléarctiques au Sénégal: notes complémentaires. *Terre et Vie* 27: 523-550.
- Mundy, P. J. & Cook, A. W. 1972. Birds of Sokoto, Part 1. *Bull. Niger. Orn. Soc.* 9: 26-47.
- Robinson, N. 1972. Bird notes from République du Togo. *Bull. Niger. Orn. Soc.* 9: 85-89.
- Rudebeck, G. 1955. Some observations at a roost of European Swallows and other birds in the southeastern Transvaal. *Ibis* 97: 572-580.
- Serle, W., Morel, G. J. & Hartwig, W. 1977. *A Field Guide to the Birds of West Africa*. Collins: London.
- Sutton, R. W. W. 1970. Bird records from Ghana in 1967 and 1968/69. Part 2. *Bull. Niger. Orn. Soc.* 7: 76-93.
- Walsh, J. F. 1971. Further notes on Borgu birds. *Bull. Niger. Orn. Soc.* 8: 25-27.
- Wink, M. 1976. Palaearctische Zugvogel in Ghana (Westafrika). *Bonn. Zool. Beitr.* 27: 67-86.
- Winstanley, D., Spencer, R. & Williamson, K. 1974. Where have all the Whitethroats gone? *Bird Study* 21: 1-14.
- Addresses: J. F. Walsh, 80 Arundel Road, Lytham St. Annes, FY8 1BN, UK.
Dr L. G. Grimes, 3 St. Nicholas Court, St. Nicholas Church Street, Warwick, CV34 4JD, UK.

©British Ornithologists' Club 1981.

The Collared Turtle Dove *Streptopelia decaocto* in Egypt by Steven M. Goodman & Patrick F. Houlihan

Received 15 November 1980

On 8 February 1979, while on a roof-top of a six-storey building at Talaat Harb Square in downtown Cairo, Egypt, we observed 3 Collared Turtle Doves *Streptopelia decaocto*. Two doves were perched approximately 4 m from one another on a wire, and were singing the characteristic tri-syllabic "coo-coooo-cuh" call. After several minutes of observation, a third bird

appeared, and landed between the 2 singing birds. Upon our approach to within 10–15 m of the birds, all 3 flew away. These observations appear to be the first reported for this species in Egypt in a free state.

Next day SMG returned to the same roof-top and found there a single vocalizing Collared Turtle Dove. The bird was collected, but not identified as to subspecies, and prepared as a skeletal specimen which is now deposited in the University of Michigan Museum of Zoology (201, 255). Some plumage notes were recorded before the feathers were removed: there was little wear, and no damage from cage battering was noted, nor were there any signs that the bird had recently been held in captivity (e.g. no wear of scales on one leg, no ring). The grey under tail-coverts, the small terminal tail spots and the dark wing-tips, combined with the distinctive call distinguished the collected bird from either the Pink-headed Turtle Dove *S. roseogrisea* or the domestic Barbary Dove *S. "risoria"* (Vaurie 1961). The bird proved to be a male with swollen testes: wing (chord) 163 mm; tail 124 mm; weight 133 gm; left testes 17 x 2 mm, right 18 x 3 mm.

The western range expansion of this species across Europe has been well documented (Stresemann & Nowak 1958), but in several cases it has not been possible to determine if the colonizers were wild, or escaped cage birds (e.g. May & Fisher 1953). At the time the above specimen was collected, a pet shop in the downtown area of Cairo, and only 4 city blocks from Talaat Harb Square, had collared Turtle Doves for sale. These captive birds were kept in cages within an open-air court at the back of the shop. Before removing the feathers from the specimen collected at Talaat Harb Square it was compared to these captive doves, and they matched in plumage colour and general feather condition. Upon inquiry, it was learned from the shop-owner that he had kept and sold Collared Turtle Doves for at least 2 years, during which time several had escaped (no estimate was made as to how many). The owner did not disclose from where his stock came. Based on these facts, it appears that the birds on the roof-top at Talaat Harb Square were probably escaped cage birds from this pet shop (or perhaps another?) which had adapted to the local environs, and were not wild colonizers.

This species is a common resident in Israel (Meinertzhagen 1920, Arnold 1962), and it is plausible that range expansion into Egypt could take place from this population, but to our knowledge there is no evidence that this has occurred, and based upon the above evidence it is best to consider the Collared Turtle Doves from Talaat Harb Square as feral cage birds. The population appears to be very localized, since we did not observe these doves in other areas of Cairo, nor in the country; nor have other workers (Haensel 1975, 1980, Meininger & Dielissen 1979) found them present recently. The species' range has increased elsewhere due to its introduction by man, so we may perhaps see a similar pattern develop in Egypt, with subsequent colonization of other portions of northeast Africa.

References:

- Arnold, P. 1962. *Birds of Israel*. Shalit Publishers Ltd: Haifa.
 Haensel, J. 1975. Ornithologische Eindrücke während eines Studien-aufenthalts in Ägypten im Herbst 1971. *Beitr. Vogelkd.* 21: 312–322.
 — 1980. Ornithologische Eindrücke während eines weiteren Studien-aufenthalts in Ägypten im Herbst und Frühwinter 1972. *Beitr. Vogelkd.* 26: 19–29.
 May, R. & Fisher, J. 1953. A Collared Turtle Dove in England. *British Birds* 46: 51–55.
 Meinertzhagen, R. 1920. Notes on the Birds of Southern Palestine. *Ibis* Ser. 11(1): 195–259.

- Meininger, P. & Dielissen, B. 1979. Ornithologische Waarnemingen in Egypte in 1977 en 1978. *Veldornitologisch Tijdschrift* 2: 78–86.
- Stresemann, E. & Nowak, E. 1958. Die Ausbreitung der Türkentaube in Asien und Europa. *J. Orn.* 99: 243–296.
- Vaurie, C. 1961. Systematic Notes on Palearctic Birds, No. 49 Columbidae: The Genus *Streptopelia*. *Amer. Mus. Novit.* 2058: 1–25.
- Address: S. M. Goodman, P. F. Houlihan, Bird Division, Museum of Zoology, University of Michigan, Ann Arbor, Michigan 48109, U.S.A.
- ©British Ornithologists' Club 1981.

Atlas of speciation in African non-passerine birds —

Addenda and Corrigenda 2

by D. W. Snow and M. Louette

Received 20 November 1980

The following items complete the list of *Addenda* and *Corrigenda* that have come to our notice since the publication of the *Atlas* in August 1978.

An earlier list was published in *Bull. Brit. Orn. Cl.* 99: 66–68 (1979).

We should make it clear that we are dealing only with records or references which were available at the time when the *Atlas* was being prepared. Hence, when these additions and corrections have been made, together with those given in the earlier paper, the *Atlas* should give a comprehensive and reasonably detailed picture of the known distributions of African non-passerines at the end of 1976 (the cut-off date for incorporation of published records). It may be noted that an exception was made of the distributional synthesis of the Cameroun avifauna which appeared in 1977 (Louette 1977, *De avifauna van Kameroon*, Doctorate thesis, Univ. Antwerp), since it contained a considerable number of new records for that country.

Map 2. See remark under Map 4.

Map 4. *Podiceps cristatus*. Delete the Gabon breeding record. It is based on a chick in the Paris Museum which is in fact *Tachybaptus ruficollis* (Louette, *op. cit.*). (To be transferred to Map 2.)

Map 25. *Ardea purpurea*. Found breeding south of Bomboma (c. 2°N, 19°E) by Vrijdagh (1954, *Gerfaut* 44: 300–302).

Map 56. *Anas sparsa*. The easternmost record in Cameroun should be a star, as ducklings were collected (Louette, *op. cit.*).

Map 61. *Anas smithii* species-group. The record for *A. smithii* in Shaba is erroneous. It was mentioned by Verheyen (1941, *Bull. Mus. Hist. Nat. Bel.* 17 (23): 3), but corrected by Chapin (1954, *Bull. Am. Mus. Nat. Hist.* 75B: 624). The specimen, in the Brussels Museum, turns out to be *Netta erythrophthalma*.

Map 66. *Torgos tracheliotus*. Insert a second breeding record for the area south of Lake Chad: Waza, Cameroun, 11° 25'N, 14° 34'E (Louette, *op. cit.*). Salvan (1968, *Oiseau* 38: 54–55) mentions breeding in Chad (in Ouad-dai, near 13°N, 21°E).

Map 83. *Accipiter nisus* superspecies. Of the records from between 10° and 23°S only the following are correct: the 3 from the NW side of Lake Malawi (Nyika and Vipya Plateaux) and the one from near Melsetter southeasternmost. The record from Sa da Bandeira, Angola, must be considered suspect as no details are given (Rosa Pinto 1970, *Mem.*

Trab. Inst. Invest. Ci. Angola 6: 31). The erroneous records refer to immature *A. ovampensis*, which can easily be confused with *A. nissus rufiventris* (Benson, Irwin & Steyn, in prep.). The latter is undoubtedly essentially montane in tropical southern Africa.

- Map 101. *Hieraaetus dubius*. Recorded from Legon, Ghana (5° 38'N, 0° 11'W); specimen in British Museum (Natural History), collected in 1973 but not incorporated at the time when the map was prepared.
- Map 125. *Francolinus bicalcaratus* species-group. Type of *F. bicalcaratus molunduensis* Grote from "Molundu", but see remark under Map 384.
- Map 128. *Francolinus coqui* species-group. The record of *F. albogularis* at Nanergou, 10° 55'N, 00° 09'E, but displaced a little to west of the zero meridian on the map (De Roo *et al.* 1969, *Rev. Zool. Afr.* 79: 311), is based on a misidentification and should be *F. coqui*.
- Map 162. *Balearica pavonina*. Breeding at Waza, Cameroun (Dragesco 1960, *Alauda* 27: 265); entered in the *Atlas* as a non-breeding record.
- Map 177. *Vanellus crassirostris*. Recorded from the Cuanza River, Angola, at about 9° 20'S, 13° 30'E, by Erard & Etchécopar (1970, *Bull. Brit. Orn. Cl.* 90: 159), and found breeding in the same area by Dean (1974, *Durban Mus. Novit.* 10: 113).
- Map 191. *Rostratula benghalensis* superspecies. Recorded breeding in the same locality as on Map 177 on the Cuanza River by Dean (*op. cit.*: 112).
- Map 212. *Columba arquatrix* species-group. Delete the registration of *C. albinucha* at about 2°N, 19°E.
- Map 219. *Streptopelia semitorquata*. The record near the confluence of the Logone and Shari rivers, south of Lake Chad, may refer to *S. decipiens* (cf. Salvan 1968, *Oiseau* 38: 130).
- Map 220. *Streptopelia turtur* species-group. The range of *S. hypopyrrha* should be extended eastward by the following records: near Garoua, Cameroun, about 9° 18'N, 13° 24'E (Reichenow 1910, *Orn. Mber.* 18: 174); Fianga, Chad, 9° 55'N, 15° 09'E and Ngaoundéré, 7° 19'N, 13° 35'E (Vielliard 1972, *Alauda* 40: 78).
- Map 224. *Turtur afer*. Delete the record on the south side of Lake Chad, which probably refers to *T. abyssinicus*.
- Map 230. *Poicephalus meyeri* superspecies. Salvan (1968, *Oiseau* 38: 135) gives Kelo (9° 19'N, 15° 48'E) as a breeding locality for *P. meyeri*. Abilela (12° 41'N, 14° 45'E) and Damraou (10° 05'N, 17° 35'E) apply to *meyeri*, not *senegalus* (Grote 1928, *J. Orn.* 76: 759, *contra* Salvan (*op. cit.*)). *P. senegalus* has been observed at Fianga (9° 55'N, 15° 09'E) by Vielliard (1971, *Cab. ORSTOM (Sér Hydrobiol.)* 5: 237) and it may occur at Waza (cf. Louette, *op. cit.*). This superspecies needs field work in the area of Lake Chad.
- Map 237. *Tauraco persa* superspecies. The following extend the range of *T. persa* eastward in the blank area north of the Congo river: Oka, 0° 37'S, 14° 54'E (Meyer de Schauensee 1949, *Notulae Nat.* 219), Nola, 3° 32'N, 16° 04'E (Stone 1936, *Proc. Acad. Nat. Sci. Philadelphia* 86: 581), Bobito, 2° 57'N, 19° 25'E, and Boyagati, 3° 33'N, 20° 33'E (Schouteden 1962, *Doc. Zool.* 3: 51).
- Map 254. *Centropus monachus* superspecies. The Lake Chad record, from *Ibis* 109: 484 (1967), is certainly based on confusion with either *C. senegalensis* or *grillii*.

- Map 259. *Tyto capensis*. The three records for central S.W. Africa (Namibia) are based on sight records. It is unlikely that there could be suitable habitat in this area, and in all probability there was confusion with *Asio capensis* (M. P. S. Irwin, *Honeyguide*, in press).
- Map 269. *Scotopelia peli* species-group. A record of *S. bouvieri* from the Junk River, Liberia (about $6\frac{1}{2}^{\circ}\text{N}$, $10\frac{1}{2}^{\circ}\text{W}$, near the record of *ussberi*), was doubted by Allen (1930) but confirmed by Bannerman (1933, *Bds Trop. W. Africa* 3: 51), and should be added to the map.
- Map 282. *Caprimulgus rufigena* superspecies. The isolated record of *C. rufigena* in Ghana is based on misidentification of a specimen in the British Museum, which turns out on re-examination to be a female *C. climacurus*.
- Map 290. *Telacanthura ussberi*. Recorded at Cape Coast, Ghana (on the coast at $1^{\circ} 13' \text{W}$), the type locality.

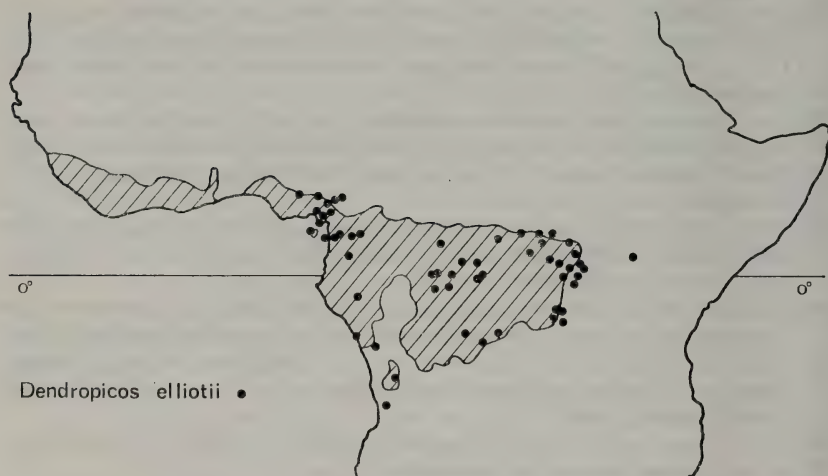


Fig 1: Distribution of *Dendropicos elliotii*

- Map 295. *Apus barbatus* superspecies. The record of *A. sladeniae* in eastern Cameroun should be transferred to approx. $4^{\circ} 45' \text{N}$, $9^{\circ} 40' \text{E}$, near Mount Cameroun, which is the type locality (Erosung, Bakossi region) for *Apus melanotus* Reichenow, a synonym. Misplacement due to confusion with another place called Bakossi in eastern Cameroun.
- Map 296. *Apus pallidus* superspecies. The isolated Congo record of *A. niansae* (specimen in Philadelphia) needs further study. It would be better to compare the specimen with other swifts once again.
- Map 325. *Coracias abyssinica* species-group. Recorded on the Ghana coast at Keta (1°E) and just inside the forest zone at Kumasi ($6^{\circ} 45' \text{N}$, $1^{\circ} 45' \text{W}$).
- Map 367. *Indicator minor* superspecies. The record at about 10°W , near the Liberian coast, should be *I. conirostris*, not *I. minor* (Rand 1951).
- Map 373. *Prodotiscus regulus*. Recorded from Kolokopé, Togo, $7^{\circ} 48' \text{N}$, $1^{\circ} 18' \text{E}$ (de Roo et al. 1971, *Rev. Zool. Afr.* 83: 88).

- Map 377. *Campethera nubica* superspecies. The range of *C. bennettii* should be extended to Rwanda, for which Schouteden (1966, *Doc. Zool.* 10: 70) gives several records.
- Map 384. *Dendropicos poecilolaemus*. The record at about 2°N, 15°E is probably erroneous. This is based on a specimen collected by Haberer, one of a series labelled "Molundu" but all non-forest species and almost certainly not from 2° 02'N, 15° 13'E. This series includes *Francolinus bicalcaratus* (Map 125).
- Map 388. *Dendropicos pyrrhogaster* superspecies. Old records of *D. pyrrhogaster* from Mount Cameroun (c. 4° 12'N, 9° 11'E) are substantiated by specimens in Berlin and Stockholm and must be considered valid.
- Map 389. *Dendropicos Elliotii*. The records from Western Zaire in Schouteden *Doc. Zool.* 1 (1961): 98; 3 (1962): 80 and 6 (1964): 109 have been omitted. The incorporation of these records results in a map as in Fig. 1.
- Map 390. *Dendropicos goertae* superspecies. The range of *D. goertae* should be extended to Rwanda, for which Schouteden (1966, *Doc. Zool.* 10: 71) gives several records.

Addresses: Dr D. W. Snow, Sub-department of Ornithology, British Museum (Nat. Hist.), Tring, Hertfordshire, HP23 6AP, England.

Dr M. Louette, Koninklijk Museum voor Midden-Afrika, B-1980 Tervuren, Belgium.

©British Ornithologists' Club 1981.

Winter field notes and specimen weights of Cayman Island Birds

by Storrs L. Olson, Helen F. James and Charles A. Meister

Received 6 January 1981

We observed and collected birds in the Cayman Islands in November 1979, mainly for the purpose of obtaining skeletal material for identification of Pleistocene bird fossils known from the islands (Morgan 1977). We were on Grand Cayman 14–22 November, during which time we concentrated on resident birds in the limestone forests in the middle and eastern portions of the island, although we maintained a mist net in constant operation in the mangrove forest near our quarters at South Sound, on the southwest coast of the island. We were on Cayman Brac 22–26 November, where most of our work was in bluff forest in the middle of the island near Stake Bay.

The most recent list of the avifauna of the Cayman Islands is that of Johnston *et al.* (1971), to which Barlow (1978) added records of migrants from Grand Cayman. The ecology and physiography of the Cayman Islands with respect to their avifaunas has been treated in detail by Johnston (1975). Less ornithological work appears to have been done in the islands in winter; hence for completeness we have included at least some mention of each species we observed. Because of the nature of our work, the absence of certain species, such as coastal migrants, probably has little significance.

We have also taken this opportunity to include records made by the late Alexander Wetmore, who made 3 vacation trips to Grand Cayman in the 1970's. Although he did not collect specimens, he kept his usual meticulous field notes, which are now on file at the National Museum of Natural History,

Smithsonian Institution. The periods of Wetmore's observations include 26 January to 16 February 1972, 8–23 February 1973, and 7–18 January 1975. An asterisk (*) indicates that a species was also observed by Wetmore but that his notes do not require further elaboration. All observations are ours unless specifically attributed to Wetmore.

We did not visit Little Cayman, but the avifauna of this island has recently been summarized by Diamond (1980), who also includes an appendix with weights of 7 species. Specimen weights in grams appear at the end of each species account and were taken with 30, 100, and 300 g Pesola spring scales. Minimum, maximum, mean, and standard deviation are given for weights when there are 5 or more specimens in a category. GC=Grand Cayman. CB=Cayman Brac.

SPECIES ACCOUNTS

**Podilymbus podiceps*. Pied-billed Grebe. GC, observed on lake E of Boddentown.

Sula leucogaster. Brown Booby. CB, 3 were seen passing bluffs at E end of island, 23 November.

**Fregata magnificens*. Magnificent Frigatebird. GC, observed only occasionally; more than 20 seen over the turtle rearing pens on the NW tip of the island.

**Ardea herodias*. Great Blue Heron. GC, common at South Sound.

Egretta alba. Common Egret. Johnston *et al.* (1971) describe the species as "uncommon in winter" on GC. We did not encounter it, but Wetmore observed the species on all 3 of his trips. On 14 February 1973 he recorded: "Forty to fifty on the larger pond at the Dairy Farm near Boddentown. With Snowy Egrets they rested in a close group on a shallow bank flying out in groups over somewhat deeper water. Here as they passed while on the wing, partly hovering, partly coasting on broad wings they stabbed rapidly at the surface of water to seize small minnows."

Egretta thula. Snowy Egret. GC, common; an impressive feeding aggregation of more than 20 was observed for several days near the North Side Road, where flood waters were washing small poeciliid fishes over a dirt road through a marsh. Considerable aggression was noted and there was a definite dominance hierarchy among individuals. Wetmore noted this species feeding on the wing, as described for *E. alba* above, both at Meagre Bay Pond on 10 February 1972 and at the dairy pond near Boddentown on 14 February 1973. CB, a few in mangrove pools.

**Egretta caerulea*. Little Blue Heron. GC, adults and immatures seen on several occasions.

**Egretta tricolor*. Louisiana Heron. GC, CB, observed occasionally.

**Egretta ibis*. Cattle Egret. GC, observed on several occasions, usually with cattle. CB, with cattle on E end of bluff, also along roadsides and very tame at Stake Bay.

**Butorides virescens*. Green Heron. GC, common in mangroves and any wet area; no dark phase birds noted. CB, a few in mangroves on S coast.

**Nyctanassa violacea*. Yellow-crowned Night Heron. CB, one in pool on S side.

Ixobrychus exilis. Least Bittern. GC, Wetmore observed an individual of this species, both perched and on the wing, in cat-tails in the Omega Settlement area, 7 February 1972. Johnston *et al.* (1971) list only one other sight record for GC.

Plegadis falcinellus. Glossy Ibis. GC, Wetmore observed an adult and an immature with herons in the West Bay district, 3 February 1972. Johnston *et al.* (1971) list but one sighting on GC and 2 for CB.

Anas discors. Blue-winged Teal. GC, encountered by Wetmore on each of his trips.

Anas americana. American Widgeon. GC, 2 seen by Wetmore on 15 February 1973 and on 20 and 24 January 1975.

Aythya affinis. Lesser Scaup. GC, 2 adult males seen by Wetmore on 6 and 10 February 1972 on a lake adjacent to Meagre Bay Pond beyond Bodden-town.

Aythya collaris. Ring-necked Duck. GC, we observed at length a male and 3 females among a flock of American Coots in a flooded quarry at the NW tip of the island on 19 November. All field marks, including the ring around the bill, were noted. This appears to be the first record of the species for the Cayman Islands.

Oxyura dominica. Masked duck. GC, one seen by Wetmore in a marsh in the Red Bay area, 12 February 1972.

Cathartes aura. Turkey Vulture. Hitherto there have been only 2 reports for GC, both equivocal (see Barlow 1978). Wetmore recorded 2 at Pageant Beach Hotel 8 January 1975, and noted birds there on 10, 13, 15 and 20 January 1975, mentioning "several" on the last date. He also saw one "in the mosquito control area" 26 January 1975. We observed one soaring over the marsh W of the North Side Road on 16 November 1979. CB, one observed close at hand soaring by bluffs at E end of island on 26 November. Johnston *et al.* (1971) give only one other record (June) for the island. When we queried a resident of CB about the "John Crow", she informed us that what was popularly thought to be a single individual had been present on CB for about 10 years and that lately the species seemed to be more common, up to 4 being seen at once.

Pandion haliaetus. Osprey. GC, observed on 3 occasions; one bird seen close at hand was definitely referable to *P. h. carolinensis*.

**Falco columbarius*. Merlin. GC, observed twice. CB, observed 3 times; one was captured 23 November in a mist net, after having killed an *Elaenia* in the net, escaping, and being recaptured near 2 Bananaquits that evidently died of fright, as they bore no injuries. CB, ♀ 213 g.

**Falco sparverius*. American Kestrel. GC, observed twice in vicinity of Breakers, probably one individual. CB, 2 observed along road on S side. Subspecific indentifications were not possible.

**Gallinula chloropus*. Common Gallinule. GC, CB, in ditches and pools in mangroves.

Porphyryla martinica. Purple Gallinule. GC, Wetmore observed 2 in the Red Bay area on 12 February 1972, one of which, a female with heavy fat (USNM 576772), was killed by a car. Johnston *et al.* (1971) list only 2 records for GC, and Bond (1973, *vide* Johnston) mentions another.

**Fulica americana*. American Coot. GC, a fair concentration observed with 4 Ring-necked Ducks (q.v.) on NW tip of island and a few seen elsewhere.

Charadrius vociferus. Killdeer. GC, Wetmore observed a dozen near Spanish Bay 17 February 1973 and noted an individual at Pageant Beach Hotel 10-17 January 1975. One sight record is listed by Johnston *et al.* (1971) and one by Bond (1973).

Charadrius semipalmatus. Semipalmated Plover. GC, not infrequently observed by Wetmore in 1972 and 1975.

Charadrius wilsonia. Wilson's Plover. GC, Wetmore observed one at Rum Point on 13 February 1973. Apparently not previously reported in winter (Johnston *et al.* 1971).

Pluvialis squatarola. Black-bellied Plover. GC, observed frequently by Wetmore on each of his trips.

**Arenaria interpres*. Ruddy Turnstone. GC, we observed a few around the turtle pens.

**Capella gallinago*. Common Snipe. GC, we flushed one individual for several days in succession in a marshy area 1 km S of Old Man Bay.

Numenius phaeopus. Whimbrel. GC, Wetmore observed one clearly for 10 minutes at Caribbean Cattle Farms on 12 February 1972. The only other record for the Caymans was reported in Bond (1978) as seen on GC on 9 September of an unspecified year.

**Actitis macularia*. Spotted Sandpiper. GC, at least 2 individuals seen.

Tringa solitaria. Solitary Sandpiper. GC, one by pool S of Grape Tree Point, 16 November.

**Tringa melanoleuca*. Greater Yellowlegs. GC, observed occasionally, usually in flooded roads.

Tringa flavipes. Lesser Yellowlegs. GC, seen by Wetmore in 1972 and 1973.

Calidris pusillus. Semipalmated Sandpiper. *Calidris minutilla*. Least Sandpiper. GC, both species recorded by Wetmore in 1972 and 1973.

Himantopus mexicanus. Black-necked Stilt. GC, seen by Wetmore on each of his trips, though we failed to encounter it.

**Thalasseus maximus*. Royal Tern. GC, observed at South Sound.

**Columba leucocephala*. White-crowned Pigeon. GC, infrequently seen; one bird was discovered roosting at night about 8 m up in mangrove saplings with grackles. CB, decidedly uncommon; most observations could have stemmed from one individual that flushed repeatedly from the same general area on the bluff.

**Zenaida aurita zenaida*. Zenaida Dove. GC, very few seen; one collected in deep forest. CB, one seen along roadside. GC, ♂ 137 g.

**Zenaida asiatica asiatica*. White-winged Dove. GC, observed on only 4 or 5 occasions; one picked up as roadside kill. GC, ♂ 134 g.

**Columbina passerina insularis*. Ground Dove. GC, common in suitable habitat. CB, abundant, even in semi-forested areas of the bluff. GC, ♂ n=5, 35.0-44.5 (38.6±3.8); ♀ 35.0, 35.0, 39.0 g. CB, ♂ 30.3, 32.5; ♀ 34.5, 35.0 g.

Leptoptila jamaicensis collaris. White-bellied Dove. GC, 4 seen in limestone forest. A male and female, probably a pair, although taken 5 days apart, from 1 km S of Old Man Bay, were very fat and showed no moult. A female from 3 km NE of Half Moon Bay had almost no fat but was moulting. Birds from both sites had been feeding exclusively on the seeds of *Anthurium*. GC, ♂ 179; ♀ 139, 164 g.

**Amazona leucocephala*. Cuban Parrot. GC (*A. l. caymanensis*), seen or heard E of Savannah at nearly every locality at which we spent any time, as well as occasionally at other places along the south road; no large flocks, 4-6 individuals being the most seen at one time. CB (*A. l. hesternus*), a pair observed on 2 occasions in different parts of bluff forest; in both instances the birds were furtive and utterly silent, in marked contrast to their counterparts on GC.

Coccyzus americanus. Yellow-billed Cuckoo. GC, one dead on road and another seen in tree in abandoned pasture.

Coccyzus minor. Mangrove Cuckoo. GC, one seen in Georgetown 22 November. CB, one seen in bluff forest, 24 November.

**Crotophaga ani*. Smooth-billed Ani. GC, CB, common in disturbed areas.

Tyto alba. Barn Owl. CB, probably several individuals flushed along roadsides almost every night; not seen on GC.

**Ceryle alcyon*. Belted Kingfisher. GC, one seen repeatedly at South Sound. CB, observed once.

Sphyrapicus varius. Yellow-bellied Sapsucker. GC, Wetmore noted this species on several occasions in 1972 and 1973.

**Colaptes auratus gundlachi*. Flicker. GC, common in limestone and mangrove forest (see Cruz & Johnston (1979) for details of the ecology of this subspecies). GC, ♂ n=5, 81.5–97.0 (88.5±6.4); ♀ n=8, 83.0–93.5 (88.2±3.1) g.

**Melanerpes supercilialis caymanensis*. West Indian Red-bellied Woodpecker. GC, common in limestone forest. GC, ♂ n=6, 68.0–81.0 (73.2±4.6); ♀ n=7, 63.0–78.0 (67.5±4.9) g.

**Tyrannus caudifasciatus caymanensis*. Loggerhead Kingbird. GC, common. CB, perhaps less common than on GC. GC, ♂ n=6, 38.5–52.0 (45.7±5.5); ♀ n=5, 34.5–46.0 (42.1±4.8) g. CB, ♂ 41.0, 47.0 g.

**Myiarchus sagrae sagrae*. Sagra's Flycatcher. GC, reasonably common in forest. GC, ♂ 18.0, 19.5, 19.5, 20.0; ♀ 17.0, 18.0, 18.5 g.

Contopus virens. Eastern Wood Pewee. GC, Wetmore saw individuals in shrubbery N of Pageant Beach Hotel on 13 February 1973 and near Barkers on 22 February 1973. Previously known from one specimen and 2 sight records (Johnston *et al.* 1971; Bond 1973).

**Elaenia martinica caymanensis*. Caribbean Elaenia. GC, tolerably common. CB, abundant; by subjective impression it seemed that this species was many times more abundant on CB than on GC. Two individuals from each island had the abdominal cavity packed with nematodes of the genus *Diplotrriaena*, which characteristically parasitizes passerines, infecting the lungs, air sacs, and body cavity. GC, ♂ n=6, 23.0–28.5 (24.9±2.0); ♀ n=7, 20.0–27.0 (22.2±2.5), sex? 21.5, 24.5 g. CB, ♂ n=6, 18.5–24.5 (21.1±2.4); ♀ 20.5, 22.0 g.

**Hirundo rustica*. Barn swallow. GC, CB, good numbers on both islands.

Tachycineta bicolor. Tree Swallow. GC, Wetmore observed 5–20 individuals at Caribbean Cattle Farms on 12, 13, and 15 February 1973 and on 20 February saw a dozen or more "on wires along the road midway to Old Man Village. Some in immature dress. The group kept changing, passing on to the east so that I believe they were in migration". The species is not listed for the Cayman Islands by Johnston *et al.* (1971), although Bond (1971b, 1972) mentions other sight records.

Stelgidopteryx ruficollis. Rough-winged Swallow. Several observed by Wetmore with Tree Swallows on 20 February 1973.

**Mimus polyglottos orpheus*. Mockingbird. GC, common in open or settled areas. CB, now common, apparently colonized CB about 1956 (Bond 1958). We preserved a skin from CB which is referable to *M. p. orpheus*, as would be expected. GC, ♂ 45.5; ♀ 42.0, 43.5 ♂. CB, ♂ 50.5 g.

**Dumetella carolinensis*. Catbird. GC, somewhat scarce, perhaps no more than 6 seen. CB, seemingly more common than on GC, but this impression

may have been influenced by the intensive efforts we made to "squeak up" *Turdus plumbeus*. GC, ♂ 34.0. CB, ♂ 39.5, 42.0 g.

Turdus plumbeus coryi. Red-legged Thrush. CB, although W. W. Brown found this well-marked endemic subspecies in 1911 to be "an extremely abundant bird" (Bangs 1916: 314), in our experience it was decidedly uncommon. By persistent "squeaking" we were able to secure 5 specimens, mainly in bluff forest, but one was taken among the buildings at Stake Bay. Some were also seen along the road on the N side of the island and on the trans-island road in the middle of the island. We probably did not encounter more than 12 or 15 individuals. All 5 of those collected showed evidence of infectious disease. Two had scaly encrustations on the tarsi, and all had subdermal lesions c. 1.5 cm in diameter on the abdomen anterior to the anus. One had a similar lesion on the anterior part of the breast. An excellent opportunity exists here to study the effects of disease on a small natural population of birds in a restricted area. CB, ♂ 71.0, 81.0, 84.0; ♀ 68.0, 73.0 g.

Poliophtila caerulea. Blue-gray Gnatcatcher. GC, one observed by Wetmore, 30 January 1972.

Vireo c. crassirostris. Thick-billed Vireo. GC, scarce, only c. 5 observed. CB, decidedly more common than on GC. It is of interest that birds from GC weigh significantly less than those from CB, or from the Bahamas where the average weight of 9 individuals was 13.9 g (Steadman *et al.* 1980). GC, ♂ 11.0; ♀ 11.0, 11.0; sex? 11.5 g. CB, ♂ 13.0, 13.5, 13.5, 13.5; ♀ 12.5; sex? 13.5 g.

**Vireo magister caymanensis*. Yucatan Vireo. GC, relatively common. GC ♂ n=5, 15.0-16.0 (15.6±0.4); ♀ n=6, 13.5-17.0 (15.2±1.3); sex? 16.0 g.

**Mniotilta varia*. Black and White Warbler. GC, this species and *Setophaga ruticilla* were the most frequently encountered non-resident warblers in woodlands. CB, present in fair numbers.

Helmitheros vermivorus. Worm-eating Warbler. GC, one bird netted on 17 and 18 November. One observed by Wetmore on 28 January 1972. GC, ♂ 10.5 g.

**Parula americana*. Parula Warbler. GC, CB, scattered individuals seen in woodlands. GC, sex? 6.2 g.

Dendroica petechia eoa. Yellow Warbler. GC, decidedly scarce, 3 taken and no more than 3 or 4 others seen; not observed on CB. One specimen was taken while foraging in wrack along the beach. Johnston *et al.* (1971: 152) describe this species as a "very common resident especially in mangrove swamp" on all 3 of the Cayman Islands. This was definitely not the case during our visit, suggesting that perhaps some of these supposedly resident birds are migratory. Wetmore's notes indicate that he did not encounter the species frequently, as in 1972 and 1973 he saw single individuals on 7 occasions, a pair on another, and only once mentioned seeing "several". GC, ♂ 6.5; ♀ 9.5, 10.0 g.

Dendroica tigrina. Cape May Warbler. GC, group of 8-10 observed S of Grape Tree Point; one netted at South Sound and scattered others seen; few, if any, of these were adult males. CB, one female-plumaged bird netted twice.

**Dendroica dominica*. Yellow-throated Warbler. GC, our only observation was of an individual taking insects while hovering in the corners of a window in a bank building in Georgetown, 15 November.

**Dendroica discolor*. Prairie Warbler. GC, not common; one taken and at least 2 others seen. CB, one or two seen. GC, ♂ 6.5 g.

**Dendroica vitellina*. Vitelline Warbler. On both islands this species seemed more abundant than any one of the wintering species of woodland warblers. GC, (*D. v. vitellina*) ♂ $n=5$, 6.5–7.0 (6.6 ± 0.2); ♀ $n=5$, 6.5–7.3 (6.8 ± 0.3); sex? 6.2, 6.5, 6.7, 6.8 g. CB, (*D. v. crawfordi*) ♂ $n=8$, 6.5–7.5 (6.8 ± 0.4); ♀ 6.5, 6.5, 7.0; sex? 6.5, 7.0 g.

**Dendroica palmarum*. Palm Warbler. GC, CB, very common in open areas and along roads; one particularly tame bird at our quarters on GC was observed to take nectar from a low-growing ornamental bush with small red flowers.

Dendroica caerulescens. Black-throated Blue Warbler. CB, a few observed; none noted on GC.

Dendroica coronata. Myrtle Warbler. GC, Wetmore found a flock of 15–20 that at first kept peculiarly close to one another in a marshy tract near Boddentown on 6 February 1972. He noted it as “common” at the Caribbean Cattle Farms on 13 and 15 February 1972. Johnston *et al.* (1971) mention it as having once been common in winter but not “reported in recent years.”

**Seiurus auroparillus*. Ovenbird. GC, at least 2 at South Sound on 21 and 22 November. CB, present in low numbers. GC, ♂ 20.5 g.

**Seiurus noveboracensis*. Northern Waterthrush. GC, at least 2 netted and 2 others seen. GC, sex? 15.0 g.

Geothlypis trichas. Yellowthroat. GC, CB, infrequent in grassy areas; no adult males seen on either island.

Icteria virens. Yellow-breasted Chat. GC, Wetmore recorded “one seen clearly at the edge of a thicket near the Caribbean Dairy Farm, beyond Boddentown” on 14 February 1973. This species is known in the West Indies only as a vagrant to Grand Bahama, Bimini, and western Cuba (Bond 1971a: 244). It is unlikely that someone with as many years field experience as Wetmore would mistake such a distinctive species.

**Setophaga ruticilla*. Redstart. GC, common in woodland. CB, commonest wintering warbler in woodlands, but only 1–2 adult males seen.

**Coereba flaveola sharpei*. Bananaquit. GC, CB, the most abundant bird. A few had enlarged gonads, the only birds of any species we collected that could possibly have been breeding. A few were heard singing on CB. In handling these birds one is impressed with how muscular and hardy they are in mist nets, in contrast to the Parulidae, with which *Coereba* has been associated by some authors. GC, ♂ $n=9$, 10.0–13.5 (11.1 ± 1.1); ♀ $n=8$, 8.5–12.5 (10.3 ± 1.1) g; sex? 9.5, 11.0, 13.5. CB, ♂ 11.0, 11.0, 11.0; ♀ 9.5, 10.0; sex? 9.0 g.

**Spindalis zena salvini*. Striped-headed Tanager. GC, at times difficult to find, but travels in flocks, when up to 12 may be encountered. GC, ♂ $n=10$, 24.0–31.0 (26.7 ± 1.8); ♀ $n=6$, 24.0–28.5 (26.2 ± 1.7) g.

**Quiscalus niger caymanensis*. Greater Antillean Grackle. GC, common; a nocturnal roost was found in a thicket of mangrove saplings along the main road by South Sound. A different subspecies, *Q. n. coryi*, is supposed to inhabit CB and Little Cayman. Despite a fair amount of searching, we did not find a single grackle on CB, although Martha B. Hays (pers. comm.) found the species to be common on Little Cayman in March 1980. Perhaps this species leaves CB to spend the fall and winter on Little Cayman, which

has more suitable habitat for grackles than does CB. GC, (*Q. n. caymanensis*) ♂ $n=10$, 67.5–88.0 (75.1±7.1); ♀ $n=11$, 51.0–64.0 (57.4±4.3) g.

**Tiaris o. olivacea*. Yellow-faced Grassquit. GC, CB, only occasionally encountered, almost always on roadsides. GC, ♂ 9.0; ♀ 8.0, 8.7 g.

Pheucticus ludovicianus. Rose-breasted Grosbeak. CB, a male in changing plumage collected in bluff forest. CB, ♂ 47.0 g.

**Passerina cyanea*. Indigo Bunting. GC, one problematical bird seen in intermediate plumage. CB, one in brown plumage netted and released.

**Melopyrrha nigra taylori*. Cuban Bullfinch. GC, common in woodland. GC, ♂ $n=10$, 16.0–18.5 (17.2±1.0); ♀ $n=6$, 14.5–16.0 (15.4±0.5); sex? 14.5, 18.0, 18.0 g.

Passerculus sandwichensis. Savanna Sparrow. GC, on 6 and 7 February 1972, Wetmore noted "single birds flushed . . . in scattered open grassy areas". On 10 January 1975 he observed "several near the Cattle Farm". Only 2 other records are given by Johnston *et al.* (1971).

Acknowledgements: We are particularly grateful to Mr. B. D. Lauer, Principal Secretary for Agriculture and Natural Resources, Cayman Islands, and Mrs. D. Downer, for providing the necessary permits and greatly facilitating our research in many ways. Dr. M. E. C. Giglioli, Director, Mosquito Research and Control Unit, supplied us with considerable useful information and also with quarters on Cayman Brac, where we were also assisted by Mr. Floyd Banks. Our travel was financed in part by a fluid research grant from the Smithsonian Institution. Nematodes were identified by J. Ralph Lichtenfels, Animal Parasite Institute, U.S. Department of Agriculture, and seeds from *Leptotila* by Robert Read, Department of Botany, Smithsonian Institution. This is contribution Number 10 of the Wetmore Papers, a project supported in part by trust funds from the Smithsonian Institution for completing unfinished work and study of undescribed material left by the late Alexander Wetmore.

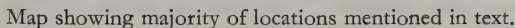
References:

- Bangs, O. 1916. A collection of birds from the Cayman Islands. *Bull. Mus. Comp. Zool.* 60(7): 303–320.
- Barlow, J. C. 1978. Records of migrants from Grand Cayman Island. *Bull. Brit. Orn. Cl.* 98(4): 144–146.
- Bond, J. 1958. *Third supplement to the Check-list of Birds of the West Indies* (1956). Acad. Nat. Sci. Philadelphia.
- 1971a. *Birds of the West Indies*. Second edition (third American edition). Houghton Mifflin: Boston.
- 1971 b, 1972, 1973, 1978. Supplements 16, 17, 18 and 22 respectively to the *Check-list of Birds of the West Indies* (1956). Acad. Nat. Sci. Philadelphia.
- Cruz, A. & Johnston, D. W. 1979. Occurrence and feeding ecology of the Common Flicker on Grand Cayman Island. *Condor* 8(4): 370–375.
- Diamond, A. W. 1980. Ecology and species turnover of the birds of Little Cayman. In D. R. Stoddart and M. E. C. Giglioli (eds.) 'Geology and Ecology of Little Cayman'. *Atoll Res. Bull.* 241: 141–164.
- Johnston, D. W. 1975. Ecological analysis of the Cayman Island avifauna. *Bull. Florida State Mus. Biol. Sci.* 19(5): 235–300.
- Johnston, D. W., Blake, C. H. & Buden, D. W. 1971. Avifauna of the Cayman Islands. *Quart. Jour. Florida Acad. Sci.* 34(2): 142–156.
- Morgan, G. 1977. Late Pleistocene fossil vertebrates from the Cayman Islands, British West Indies. Unpublished Master's Thesis. University of Florida, Gainesville. 260 pages.
- Steadman, D. W., Olson, S. L., Barber, J. C., Meister, C. A. & Melville, M. E. 1980. Weights of some West Indian birds. *Bull. Brit. Orn. Cl.* 100(2): 155–158.

Address: S. L. Olson, H. F. James, and C. A. Meister, Division of Birds, National Museum of Natural History, Smithsonian Institution, Washington, DC 20560, U.S.A.

by G. R. Cunningham-van Someren and Herbert Schifter

In November–December 1978 and 1979 two joint collecting trips were made by the Naturhistorisches Museum, Wien (NMW) and the National Museum, Nairobi (NMN), Kenya, to the North Nandi Forest, Western Kenya, 0° 20'N, 34° 58'E at some 2400 m, 75 miles southwest of Mt Elgon. As far as we are aware no serious collecting has been undertaken in this isolated montane forest, though Sir Frederick Jackson (1938) collected in “Nandi”, a locality “20 miles north of Kibigori Station” (on the Kenya railway, south of Kisumu on Lake Victoria). The forest of Nandi (=South Nandi), some 60 miles south of North Nandi at 2130 m is now virtually destroyed and replaced by tea plantations.



The NMN collection includes series taken in 1962 on Mt Loima, Murusigar, west of Lake Turkana, near the Uganda border and Mt Kadam. Mt Loima rises to 2100 m and is well forested at the upper levels. These and the North Nandi series have been compared with examples from Ethiopia, Kenya, Tanzania, Uganda and in some cases with material from Rwanda and Zaïre. For the loan of comparative material we wish to thank the British Museum (Natural History), Tring (BMNH, I. C. J. Galbraith), the Field Museum of Natural History, Chicago (FMNH, D. E. Willard), the Institute

Royal des Sciences Naturelles de Belgique (IRSNB, A. Prigogine), the American Museum of Natural History, New York (AMNH, L. L. Short), the Los Angeles County Museum, Los Angeles (LACM, R. Schreiber), and The Museum Alexander Koenig, Bonn (MAKB, H. E. Wolters). Wings were measured as flattened chords, all measurements being in mm. Bill measurements were of the exposed culmen. Colour references are Ridgway (1912) "Color Standards and Nomenclature", Washington.

TURDUS ABYSSINICUS Olive Thrush

When specimens were set out in series by localities to take account of the 3 major plumage characters, throat/chest, flanks/belly and back colours, it was apparent that there was a sharp division between extremely pale birds from Morongole, Loima, Karissia and the Nguruman Range and those from other areas. Pale, but less so, and distinct from typical *abyssinicus* were examples from the Imatong Mts, grading through Mt Kulal, Marsabit, Lololokwi (Urugess) to a darker complex from North Nandi, Mt Elgon, Mt Kenya, Aberdare Range, Mau and Londiani, the last locality producing the darkest specimens overall. A distinctly "brown" group occurs in the Chyulu Range, with *deckeni* of Kilimanjaro dark and *baraka* from Ruwenzori, Uganda the darkest. Nevertheless there are intergrades.

White (1962) includes in the range of *abyssinicus* Mt Elgon, the Kenya Highlands to Londiani, south to Loliondo, Tanzania, but he omits mention of the pale *polius* from Mt Marsabit and Mt Lololokwi. Sclater (1930) also did not recognise *polius* but the race is upheld by Friedmann (Benson 1946). Van Someren (1939) included Mt Kulal, Marsabit and Mt Nyiru in the range of *polius* and in addition recognised the race *elgonensis*, the range of the latter including Cherangani Range, Mau, Mt Kenya, Aberdare Range and (according to Moreau, in van Someren 1939) Longido and Kitumbeini in Tanzania. Friedmann (1966) accepted both *polius* and *elgonensis* as distinct from *abyssinicus* but considered (1969) Mt Nyiru birds to be *abyssinicus* together with (1967) pale birds from the Karissia Hills. Our Karissia specimens are however clearly not *abyssinicus*. We recognise *abyssinicus* from Ethiopia but also take note of birds from Mega, Southern Ethiopia, which Benson (1946) placed near *polius* and with which we tentatively associate birds from Kulal, Marsabit and from the type locality, Lololokwi. (Mega birds have not been seen by us.) We recognise *elgonensis* and consider provisionally that its range includes Cherangani Range, Mt Kenya, Aberdare and possibly the Mau. We accept *chyuluensis* as being quite distinct and altogether browner than other races but approaching *deckeni*. Specimens from the Imatong we provisionally place with *abyssinicus*. Three specimens in NMN from Londiani are puzzling since they so nearly resemble the Mau population (? *elgonensis*), yet nearly match *baraka* of the Ruwenzori Range, and are somewhat similar to *oldeani* of the Crater Highlands of Tanzania. We find that birds from the North Nandi and Mt Loima are distinct differing from all other races.

We now propose 2 new subspecies.

Turdus abyssinicus fuscatus subsp. nov.

Holotype: ♂ Reg. No. 17597/808 in National Museum, Kenya. Field No. 299. Collected on track Kipsamoiti-Kamwega, North Nandi Forest, Western

Kenya, 0° 20'N, 34° 58'E, at 2133 m by Naturhistorisches Museum, Wien and National Museum, Kenya joint expedition on 19.xi.1978.

Description: Throat to breast Hair Brown, throat with a few dark streaks. Undertail coverts and thighs grey with white central shaft. Head and back, Blackish Brown. Wings slightly blacker, tail black. Bill orange, legs dirty orange. Iris dark brown. Wing 109.0 mm, tail 98.0 mm. Bill 21.0 mm.

The darkest, blackest-backed and dark chested form amongst Kenya montane forest populations. Considerably darker than *elgonensis* from nearby Mt Elgon. Chest is greyer, flanks paler but back darker than nominate *abyssinicus*.

Weight and measurements: Holotype weighed 60.5 g. Paratypes: ♂ Reg. No. 17600/808, wing 109.0 mm, weight 67.0 g; ♂ Reg. No. 17598/808, wing 112.0 mm, weight 58.0 g; ♀ Reg. No. 17601/808, wing 117.0 mm, weight 65.5 g; ♀ Reg. No. 17602/808, wing 107.0 mm, weight 57.0 g; ♀ Reg. No. 17599/808, wing 102.0 mm, weight 62.0 g. All collected at the same site as the holotype between 12.xi. and 6.xii. 1978. All in NMN. In 1979, 2 more specimens which were secured in the same forest but further south near Chemisia, 0° 15'N, 35° 00'E, match the type series.

***Turdus abyssinicus mwaki* subsp. nov.**

Holotype: ♂ Reg. No. 12253/808, in National Museum, Nairobi, Kenya. Collected on Mt. Loima, Muruasigar, West Turkana, Kenya, 3° 02'N, 35° 00'E, at 2133 m on 8.xi.1962 by Joseph Mwaki for A. D. Forbes-Watson.

Description: Throat to breast Mouse Grey, slightly more darkly streaked on throat. Flanks and belly Tawny Olive, some white towards the crissum. Head, back and outer web of wings, Fuscous. Rump paler grey. Tail slightly darker. Under-tail coverts white edged grey. Legs Orange. Bill orange-red.

Weight and measurements: Wing 115.0 mm, tail 93.0 mm, bill 21.0 mm. Paratypes: 12 ♂♂ and 3 ♀♀ collected on Mt Loima between 22.x. and 8.xi.1962 by Joseph Mwaki. Wings: ♂♂, 104, 105, 105, 108, 109, 109, 110, 111, 112, 113, and 114.0 mm, ♀♀ 101, 111 and 117.0 mm. All in NMN.

The palest form on ventral and dorsal surfaces and closest to *polius* of Mearns (1913) is from Lololokwi (Uraguess) and is far less richly coloured than typical *abyssinicus*. With this race we include 2 ♂♂ from Morongole, Eastern Uganda at 3° 49'N, 34° 20'E at 2538 m, taken by the Oxford University Expedition on 4 and 6.ix.1966, in NMN, with wings of 110 and 114.0 mm. Also associated are 3 specimens collected by A. L. Archer on 22.ix.1974 from Karissia Hills, Kenya, at c. 1830 m: 2 ♂♂ with wings 105 and 107.0 mm and one ♀ with wing 103.0 mm. These 3 localities are isolated ranges. It is possible that Friedmann's (1966) specimens from Mt Moroto, Uganda at c. 2640 m, which he referred to as *polius*, are really examples of this new race. We consider that birds from the other isolated ranges east of the Rift Valley are *polius*.

Amongst specimens loaned by the BMNH was one collected in 1900 by W. G. Doggett for Sir Harry Johnston (field no. 106), labelled "Entebbe", April. The locality however should read N'dabibi, which is northwest of Lake Naivasha, Kenya. N'dabibi, in 1900 was within the Uganda Protectorate.

This new race is named for Joseph Mwaki, collector and skinner for many years for A. D. Forbes-Watson and later for the NMN.

POGONOCICHLA STELLATA White-starred Forest Robin

While working over the collections in order to establish the identity of our specimens of this species from the North Nandi, which we naturally at first thought would be near *elgonensis* of Ogilvie-Grant (1911) from Mt Elgon, our birds proved to have black and yellow tails and not the all-black tail of the adult of the Mt Elgon race. We also had some comparative material from the Imatong Mts, Southern Sudan, by courtesy of Major Melvin Traylor (FMNH). Cave & MacDonald (1955) referred their birds from the Imatong to the race *guttifer* Reichenow & Neumann (1895) from Mt. Kilimanjaro. However FMNH Imatong birds differ markedly from all other forms occurring in Eastern Africa. Moreau (1951b) included the Imatong group on the Sudan-Uganda border in the range of *keniensis* of Mearns, 1911, as well as Mt Nyiru and Kulal, while Friedmann & Stager (1969) referred their Mt Nyiru birds to *guttifer*. Having put out a series of all presumed races, intergrades or intermediate forms in geographical order it is quite clear to us that birds from the Imatong are not *guttifer*, *keniensis* or *elgonensis*, and they also differ from specimens from Mt. Kulal. White (1962) on the other hand, includes Imatong birds along with Kulal and Garguess and the Kenya Highlands under *intensa* of Sharpe, 1901.

In view of the confusion over the validity and distribution of the races of *P. stellata* in Eastern Africa we propose to give these pale yellow-bellied birds from the Imatong subspecific status as

***Pogonocichla stellata pallidiflava* subsp. nov.**

Holotype: ♂, Reg. No. 298521 in Field Museum of Natural History, Chicago, U.S.A. Collected at Gilo, Imatong Mountains, Southern Sudan, 4° 02' N, 32° 51' E, at 2100 m, by M. Traylor on 3.iii.1977.

Description: Head, ear coverts, throat, Dark Plumbeous. White supra-orbital spot, large. Throat spot white, outlined in black. Breast to belly and flanks, undertail coverts all Primuline Yellow. Paler than birds from Mt Kulal, Kenya Highlands to Tanzania and the races *elgonensis*, *keniensis*, *macarthuri*, *belleri*, *orientalis* and *guttifer*. Tail jet black with Primuline Yellow base to all rectrices save the central pair. Black tips of 11.0–13.0 mm on the inner webs. Tails brighter yellow than in other races, not ochraceous. Back Dark Citrine, with Primuline Yellow rump. Wings, primaries and secondaries dark Purplish Grey. Secondaries, outer webs blue-grey edged olive. Coverts faintly edged blue-grey and olive tipped. Outer webs of primaries light blue-grey.

Weight and measurements: Wing 77.0 mm, tail 60.0 mm, bill 12.0 mm. Paratypes: ♂ Reg. No. 298515, wing 71.5 mm, weight 18.0 g; ♀ Reg. No. 298520, wing 71.5 mm, weight 18.0 g; ♀ Reg. No. 298519, wing 69.0 mm, weight 18.0 g; Unsexed Reg. No. 298522, wing 72.5 mm, weight 15.8 g; Unsexed, Reg. No. 298518, wing 71.5 mm, weight 17.0 g. All from Gilo, in FMNH, collected around the same date as the holotype. In addition there is one ♀ No. 3003, topotype, collected Gilo, 24.vi.1978 by G. Nikolaus, in NMN, wing 73.0 mm, weight 16.5 g. The very pale yellow of the ventral surface and the

very black and Primuline Yellow tail of this race distinguishes it from all other East African races.

ALETHE POLIOCEPHALA Brown-chested Alethe

Comparative material of this species in NMN includes topotypical specimens of the race *ufipae* from Mbisi, Ufipa, southwest Tanzania; *akeleyae* from Burguret, Meru and Mt Kenya; *carruthersi* from Toro, Mpanga and Mabira Forests of Uganda; a series from the low Bwamba Forest (Ruwenzori-Semliki), Uganda; some from Kakamega Forest, Western Kenya; and specimens from Mt Elgon. We have compared these with our series from the North Nandi Forest and Mt Imatong of Southern Sudan. It is at once clear that birds from the latter 2 localities do not match any described race.

Chapin (1953) lists *carruthersi* as from Toro, Beni (Zaire), and the Lotti forest of the Imatong, while Cave & MacDonald (1955) also refer the Sudan birds to *carruthersi*. Jackson (1938) gives the range of *carruthersi* as "east to Nandi and slopes of Mt. Elgon". Our series does not substantiate this wide distribution and we suggest that *carruthersi* should be maintained for birds of the lower altitudes in Uganda and western populations generally; and that *akeleyae* should be the race confined to the Kenya Highlands (except Mt. Elgon and the forest of Kakamega). The population in the North Nandi forest does not agree with birds from nearby Mt. Elgon or Kakamega, the Kakamega birds being nearer to *carruthersi* and the Mt. Elgon birds intermediate. However, though we only have 2 specimens from which to judge, they do not match *akeleyae* either. The North Nandi birds compared with *carruthersi* are altogether paler, duskier on the underside with backs darker and not so rich brown. In *akeleyae*, the marked chestband separates this from the other races. Imatong birds are close to those from North Nandi, but are easily separable, having an almost white belly, dark black heads and more olive backs with a buff chestband.

We propose to assign the North Nandi birds to a new race.

Alethe poliocephala nandensis subsp. nov.

Holotype: ♂ Reg. No. 17700/778, Field No. 368, in National Museum, Nairobi, Kenya. Collected on the track from Kamwega to Kipsamoiti, North Nandi Forest, 0° 20'N, 34° 58'E, at 2133 m by Naturhistorisches Museum, Wien and National Museum, Kenya joint expedition on 22.xi.1978.

Description: Head Sooty Black. Black pre-ocular spot and grey supercillium. Nape, back to rump Brussels Brown, more olive than Imatong birds. Tail black. Wings fuscous, primaries with outer web narrowly edged brown. Secondaries outer webs Brussels Brown, faintly cross barred. Coverts, edged and tipped Brussels Brown. Throat white, faint breast band of Deep Olive Buff, paler than the Imatong birds. Belly white faintly tinged creamy. Flanks greyish, paler than Imatong birds.

Distinguished by its lack of a marked chestband from *akeleyae* and by the pale chestband of *carruthersi* and from both by the tone of brown of the back.

Weight and measurements: wing, 88.5 mm, tail, 57.0 mm, bill, 11.5 mm. In the field, iris brown, bill black, feet pinkish-grey. Weight 27.0 g. Paratypes: taken in the same area over the period 9.xi to 20.iii.1978: 25 ♂♂ wings mean

86.0 (80.5–91) mm, 15 ♀♀, wings 84.83 (82.0–90.0) mm and 10 sub-adult. Mean weights of adult ♂♂, 27.8 (25.5–32.5) g and of adult ♀♀ 28.5 (26.0–31.0) g.

Juvenile/sub-adult: one North Nandi juvenile just moulting its sub-adult plumage is very much darker than the comparable stage of *akeleyae*, the spots being rufous with a broad base and an edge of jet black, whereas *akeleyae* is a light buff, the spots with darker brown edges and all spots less bold and narrower.

A small series taken in 1979 in the same forest, but further south near Chemisia, 0° 15' N, 35° 00' E, match the type series. Some specimens of the 2 collections will be deposited in the Naturhistorisches Museum, Wien.

Specimens from the Imatong Mountains, Southern Sudan, with which *nandensis* has been compared, are to us distinct and so we propose a new race.

***Alethe poliocephala giloensis* subsp. nov.**

Holotype: ♂, Reg. No. 298584, in Field Museum of Natural History, Chicago. Collected at Gilo, Imatong Mountain, Southern Sudan, 4° 02' N, 32° 51' E, at 2100 m, by R. Glen on 21.ii.1977.

Description: Top of head and below eye to chin Blackish Brown. Ear coverts paler, browner. Bill black. Grey supercillium. Back Cinnamon Brown to rump. Tail Dull Fuscous. Wings Fuscous, primaries narrowly edged Cinnamon, secondaries outer web Cinnamon, lightly transversely barred. Throat white. Upper breast fairly distinct band of Light Drab. Belly lightly washed grey-brown. Flanks darker greyish brown. Undertail coverts dusky white. Collectors notes: Iris, red-brown. Feet, flesh with brown wash on scales.

Weight and measurements: Wing 85.5 mm, tail 57.0 mm, bill 13.0 mm. Weight 27.0 g. Paratypes: collected in the same area as holotype between 19–21.ii.1977: ♂ Reg. No. 298585, wing 86.0 mm; ♂ Reg. No. 298579, wing 85.0 mm; ♂ Reg. No. 298577, wing 86.0 mm; ♂ Reg. No. 298582, wing 86.5 mm; ♂ Reg. No. 298586, wing 86.0 mm.

Sub-adult: ♀ Reg. No. 298578, wing 85.0 mm. ♀ Reg. No. 298588, wing 83.5 mm. Females do not differ from males.

Additional specimens, one topotypical ♂ Gilo, 4.xi.1978, G. Nikolaus, in NMN and 2♂♂ from Gilo, taken 3–4.i.1978 in Museum A. Koenig, Bonn.

ALCIPPE ABYSSINICA Abyssinian Hill Babbler

This is a difficult and confusing species as there are so many combinations of different degrees of colour in the plumage of the head, back and underparts, with many intergrading forms in East African montane populations.

White (1962) recognised 3 races from within East Africa: the very distinct *atriceps*, which Deignan (*in* Peters 1964) regarded as a separate species, *stierlingi* from Tanzania and all the other East African races Deignan commits to *abyssinica*, including *keilimensis* and *chyulu* Moreau (1951a) recognised *atriceps* and *stierlingi* but thought *chyulu* might be a good race. Friedmann & Stager (1969) assigned specimens from Mt Nyiru, Northern Kenya to *abyssinica*, but they also thought that *chyulu* might be admissible. We now find we have a very distinct series from the North Nandi montane forest and from Mt Loima Forest. They are readably separable from specimens

from the rest of East African Highlands, in which of course there are many intergrades; and, indeed, with more material it might be possible to separate populations from each of the "montane islands". However, we have no hesitation in describing the following 2 new races:—

***Alcippe abyssinica poliothorax* subsp. nov.**

Holotype: ♂ Reg. No. 17750/823, Field No. 163, in National Museum, Nairobi. Collected on track Kamwega-Kipsamoiti, North Nandi Forest, Kenya, 0° 20'N, 34° 58'E at 2133 m by Naturhistorisches Museum, Wien and National Museum, Kenya Joint Expedition on 15.xi.1978. The gonads were enlarged.

Description: Head, frons to nape and ear coverts dull Gull Grey, Bill, upper light pale horn, paler at the tomium; lower, pale horn with pale tomium. Back to rump Dresden Brown, browner, darker than birds from Mt Loima. Tail Fuscous, outer webs Dresden Brown. Wings Fuscous with outer webs Dresden Brown except outer four primaries which are narrowly edged pale. Throat and upper breast Light Neutral Grey, paler on the belly. Flanks Dark Olive. These birds viewed on the ventral surface appear almost blue-grey compared with other specimens.

Weight and measurements: Wing 68.0 mm, tail 58.0 mm, bill 11.0 mm. Paratypes: collected at the same place between 9.xi and 20.xii.1978, 23 ♂ and 15 ♀♀. Wings, ♂♂ mean 66.4 (62.0–71.0) mm with 50% between 65.0–68.0 mm; ♀♀, mean 65.3 (63.0–68.0). Another series of 10 specimens taken in 1979 in the same forest but further south near Chemisia, 0° 15'N, 35° E, match the type series. Set out in series from most localities in East Africa, the very pale ventral surface readily distinguishes this race.

***Alcippe abyssinica loima* subsp. nov.**

Holotype: ♂ Reg. No. 12371/823, in National Museum, Nairobi. Collected on Mt. Loima, Muruasigar, West Turkana, Kenya, 3° 02'N, 35° 00'E at 2100 m by Joseph Mwaki for A. D. Forbes-Watson, on 13.x.1962.

Description: Head, frons to nape and ear coverts Deep Quaker Drab. Bill as in *A. a. poliothorax*. Back to rump Antique Brown. Tail Fuscous with outer webs Antique Brown. Wings Fuscous with outer webs of primaries and secondaries Antique Brown narrowly edged pale, almost white. Throat and upper breast Gull Grey. Chin with a few faint white streaks. Belly paler than breast. Flanks very pale Olive. Overall on the breast and belly birds are paler than examples from the Kenya Highlands, North Nandi and Chyulu Range.

Weight and measurements: Wing 68.5 mm, tail 65.0 mm, bill 11.0 mm. Paratypes: 4♂♂ and 7♀♀ collected at the same site as the holotype between 22.x and 8.xi.1962 by J. Mwaki. 4 ♂♂ wings mean 70.2 (68.5–70.0) mm, 7 ♀♀ wings mean 68.8 (66.0–71.0) mm.

SHEPPARDIA AEQUATORIALIS Equatorial Akalat

Our fine series from the North Nandi Forest has been compared with examples from the slightly lower Kakamega Forest and with specimens from the Chepalunga Forest, West Mau (some 35 miles from Kericho), as well as with examples from Uganda and Rwanda. Set out in series by locality it was

obvious that the North Nandi birds, though superficially similar in general colouration, differed considerably from other races, being "golden-yellow" rather than brown, with a conspicuous pale throat. Grades of colour matched against Ridgway "Color Standards" showed differences are as follows:—

Locality	Throat	Breast	Flanks
North Nandi	Antimony Yellow	Yellow Ochre	Raw Sienna
Kakamega	Ochraceous Orange	Ochre Orange	Mars Yellow
Chepalunga	Deep Chrome	Mars Yellow	Raw Sienna

White (1962) only admits one race from the Imatong, *acholiensis*, considering all other populations to be nominate *aequatorialis*. The North Nandi birds are so distinct we propose to give them subspecific status as:—

***Sheppardia aequatorialis pallidigularis* subsp. nov.**

Holotype: ♂ Reg. No. 17611, Field No. 177, in National Museum, Nairobi, collected on track Kamwega-Kipsamoiti, North Nandi Forest, Kenya, 0° 20'N, 34° 58'E, at 2133 m by Naturhistorisches Museum, Wien and National Museum, Kenya Joint Expedition on 15.xi.1978.

Description: Crown, head and back dark olive or Medal Bronze. Tail slightly rufous, upper tail coverts more rufous. Undertail coverts Ochraceous. Reduced white pre-ocular spot. Faint grey supercillium shading to grey at the ear. Throat conspicuously pale, Antimony Yellow, contrasting strongly with the Yellow Ochre of the upper breast. Flanks Raw Sienna. Belly faintly yellow tinged white. Soft parts: iris very dark brown, bill dark horn; legs blueish-grey. Testes enlarged. Altogether more "golden-yellow" on the underside than nominate *aequatorialis* from Chepalunga (near type locality). Yellower than examples from Kakamega, which are darker, more brown than golden and without the distinct pale throat.

Weight and measurements: Wing 71.0 mm, tail 49.0 mm, bill 11.0 mm. Weight 16.0 g. Paratypes: 27 ♂♂ and 19 ♀♀, all from the same locality as the holotype, collected between 9.xi–20.xii.1978. Wings, ♂♂, mean 67.3 (63.0–71.0) mm with 40% at 70.0 and over; ♀♀ mean 65.7 (63.0–71.0) mm. Weights ♂♂ mean 15.5 (14.0–17.0) g. ♀♀ mean 14.8 (11.0–16.5) g.

Another series of 18 specimens taken in 1979 in the same forest but further south near Chemisia, 0° 15'N, 35° 00'E, match the type series.

Juveniles: Fledglings just assuming their first plumage are heavily spotted and spangled with Light Ochre on a darker Olive-Brown background, while the background of the chest is almost black, with feather tips arrow-marked in ochre. Belly washed with grey and flanks assuming the tawny ochre. Tails not as rufous as in adults. Upper mandible pale horn and lower dirty yellow with a slight dark tip. Gape yellow. The juvenile only gradually assumes the pale yellowish gular spot. When slightly older the juvenile has a very distinct yellow throat and is still spangled on the head and back, with wing coverts tipped ochreous, the belly whiter and the flanks richer ochreous than the adult. Bill is then black, the chestband has lost the black background and is more rufous, with pale tips to the feathers.

(to be continued)

NOTICE TO CONTRIBUTORS

Papers, whether by Club Members or by non-members, should be sent to the Editor, Dr. J. F. Monk, The Glebe Cottage, Goring, Reading RG8 9AP, and are accepted on the understanding that they are offered solely for publication in the *Bulletin*. They should be typed on one side of the paper, with double-spacing and a wide margin, and submitted with a *duplicate copy on airmail paper*.

Scientific nomenclature and the style and lay-out of papers and of References should conform with usage in this or recent issues of the *Bulletin*, unless a departure is explained and justified. Photographic illustrations, although welcome, can only be accepted if the contributor is willing to pay for their reproduction.

An author wishing to introduce a new name or describe a new form should append *nom.*, *gen.*, *sp.* or *subsp. nov.*, as appropriate, and set out the supporting evidence under the headings "Description", "Distribution", "Type", "Measurements of Type" and "Material examined", plus any others needed.

A contributor is entitled to 10 free reprints of the pages of the *Bulletin* in which his contribution, if one page or more in length, appears. Additional reprints or reprints of contributions of less than one page may be ordered when the manuscript is submitted and will be charged for.

BACK NUMBERS OF THE BULLETIN

Available post free on application to Dr. D. W. Snow, Zoological Museum, Tring, Herts HP23 9AP, England, as follows: 1973-1979 (Vols. 93-99) issues (4 per year), £2.00 each issue; 1969-72 (Vols. 89-92) issues (6 per year), £1.50 each; pre-1969 (generally 9 per year) £1.00 each. Indices £1.00 for Vol 70 and after, £2 for Vols 50-69, £2.50 for Vol 49 and before. Long runs (at least 10 years) are available at reduced prices on enquiry, higher prices may be charged otherwise for scarce numbers.

Vol. 100 No. 1 £4.00, No. 2, 3 & 4 £2.00 each issue.

MEMBERSHIP

Only Members of the British Ornithologists' Union are eligible to join the Club: applications should be sent to the Hon. Treasurer, Mrs. D. Bradley, 53 Osterley Road, Isleworth, Middlesex, together with the current year's subscription. The remittance and all other payments to the Club should always be in *sterling* unless an addition of £1.00 is made to cover bank charges for exchange, etc. Payment of subscription entitles a Member to receive all *Bulletins* for the year. Changes of address and revised bankers' orders or covenants (and any other correspondence concerning Membership) should be sent to the Hon. Treasurer as promptly as possible.

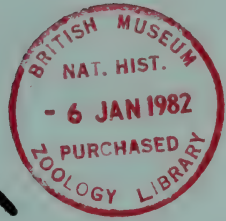
SUBSCRIPTION TO BULLETIN

The *Bulletin* may be purchased by non-members on payment of an annual subscription of £12.00 (postage and index free). Send all orders and remittances in sterling, unless an addition of £1.00 is made to cover bank charges, to the Hon. Treasurer. Single issues may be obtained as back numbers (see above).

CORRESPONDENCE

Correspondence about Club meetings and other matters not mentioned above should go to the Hon. Secretary, R. E. F. Peal, 2 Chestnut Lane, Sevenoaks, Kent TN13 3AR.

Bulletin of the
British Ornithologists' Club



Edited by
Dr. J. F. MONK

FORTHCOMING MEETINGS

Tuesday, 12 January 1982 in the Senior Common Room, South Side, Imperial College, Prince's Gardens, S.W.7 at 6.30 p.m. for 7 p.m. Dr T. J. Seller of the Department of Zoology and Applied Entomology of Imperial College will speak on *Are Bullfinches and Fruit Crops really incompatible?* Those wishing to attend should send their acceptance with a cheque for £5.50 a person to the Hon. Secretary at 2 Chestnut Lane, Sevenoaks, Kent TN13 3AR (telephone Sevenoaks 0732 50313) to arrive not later than first post on Thursday, 7 January.

Tuesday, 2 March 1982 at the same venue and time, Professor Gordon H. Orians, Director of the Institute of Environmental Studies, the University of Washington, widely known for his ecological studies, will speak on some aspects of his work on icterid blackbirds in *Mates and Real Estate in Blackbird Social Systems*. Those wishing to attend should send their acceptance with a cheque for £5.50 to the Hon. Secretary (address above) to arrive not later than first post on Thursday, 25 February.

Tuesday, 18 May 1982 at the same venue and time Mr Peter Conder, O.B.E., will speak on *Wetlands in Sind*. The Annual General Meeting will be held at the same place at 6 p.m.

Tuesday, 20 July 1982 Mr T. M. Gullick will speak on *Birds in central Spain*.

Tuesday, 28 September 1982 Dr David Houston will speak on *Vultures*.

Many copies of the *Bulletin* must get thrown away annually by Members. This is extremely wasteful of stock, which the Club would welcome. Please send all unwanted copies, and ask your executors to do the same, to the Hon. Treasurer at 53 Osterley Road, Isleworth, Middlesex TW7 4PW at any time. Postage will be refunded if requested.

COMMITTEE

D. R. Calder (*Chairman*)
R. E. F. Peal (*Hon. Secretary*)
Dr. J. F. Monk (*Editor*)
J. G. Parker
R. A. N. Croucher

B. Gray (*Vice-Chairman*)
Mrs. D. M. Bradley (*Hon. Treasurer*)
R. D. Chancellor
Revd. G. K. McCulloch, O.B.E.



Bulletin of the BRITISH ORNITHOLOGISTS' CLUB

Vol. 101 No. 4

Published: 18 December 1981

The seven hundred and thirty-sixth Meeting of the Club was held in the Senior Common Room, South Side, Imperial College, London, S.W.7 on Tuesday 15 September 1981 at 7 p.m. The attendance was 19 Members and 8 guests.

Members present were: B. GRAY (*Chairman*), Major N. A. G. H. BEAL, R.M., K. F. BETTON, Mrs DIANA BRADLEY, R. A. N. CROUCHER, Sir HUGH ELLIOTT, Bt., D. J. FISHER, D. GRIFFIN, Revd. G. K. McCULLOCH, C. J. MEAD, Mrs U. V. MEAD, Dr J. F. MONK, J. G. PARKER, R. E. F. PEAL, R. C. PRICE, P. S. REDMAN, S. A. H. STATHAM, C. E. WHEELER and Lieut.-Col. T. C. WHITE.

Guests present were: Miss M. BARRY, D. BRADLEY, Miss D. BURGESS, Miss S. P. F. DIXON, J. KING, Dr AMICIA MELLAND, J. M. A. OSBORNE and K. D. SHARP.

Mr C. J. Mead gave an illustrated address on "Autumn birds in Texas". He described the habitats which he had visited and the birds there. He showed excellent slides of a large number of these species photographed by him in the hand or in the field.

The seven hundred and thirty-seventh Meeting of the Club was held in the Senior Common Room, South Side, Imperial College, London, S.W.7 on Tuesday 17 November 1981 at 7 p.m. The attendance was 29 Members and 20 guests.

Members present were: D. R. CALDER (*Chairman*), Mrs S. VERE BENSON, K. F. BETTON, Dr G. BEVEN, Mrs DIANA BRADLEY, P. L. BRITTON, P. J. CONDER, S. CRAMP, R. A. N. CROUCHER, J. H. ELGOOD, Sir HUGH ELLIOTT, Bt., R. J. FARMER, D. J. FISHER, A. GIBBS, B. GRAY, D. GRIFFIN, M. C. HODGSON, P. HOGG, J. KING, Revd. G. K. McCULLOCH, Dr J. F. MONK, P. J. OLIVER, J. G. PARKER, R. E. F. PEAL, P. S. REDMAN, P. J. SELLAR, Professor G. H. N. SETON-WATSON, A. VITTERY and C. E. WHEELER.

Guests present were: Miss M. BARRY, Mrs G. BEVEN, Miss D. BURGESS, P. CLEMENT, S. E. CHAPMAN, Miss SARAH CONDER, Dr A. W. DIAMOND, Dr E. K. DUNN, Mrs S. FRANCIS, Mrs B. M. GIBBS, PETER HAYMAN, Mrs M. McMILLAN, Mrs DIANA MONK, Miss M. SAUNDERS, Mr and Mrs G. H. SEARLE, Mrs M. H. SETON-WATSON, R. E. SHARLAND, P. J. STRANGEMAN and M. G. WILSON.

Mr Peter Hayman spoke on "Seabirds" and described those which he had seen in the South Atlantic and Pacific. He dealt especially with the distinctive differences in flight in otherwise similar species (mostly Procellariiformes), sufficient to identify them in the air. These were due to dissimilarities in the proportions of the bodies of the birds, which raised taxonomic problems of much interest, which he is continuing to investigate. He showed slides to illustrate his address.

New races of montane birds from Kenya and southern Sudan

(continued)

by G. R. Cunningham-van Someren and Herbert Schifter

Received 4 December 1980

COSSYPHA CYANOCAMPTER Blue-shouldered Robin Chat

Our first series, taken in 1978, of this far from common bird consisted of 6 ♂♂, 3 ♀♀, 2 sub-adults and an immature ♀ from North Nandi. In 1979 a further 12 specimens were secured in the southern portion of the forest. These have been compared with material from Kakamega Forest, Uganda

and Rwanda. The North Nandi birds are quite distinct, being generally paler and yellower than other races. Through the kindness of Major Melvin Traylor we have received a ♂ (wing 84.0 mm) and ♀ (wing 72.0 mm) collected at Giloon, the Imatong Mountains, Southern Sudan, 4° 02'N, 32° 51'E at 2100 m in February 1977. These are referred to as *bartteloti* by Cave & MacDonald (1955). However they are much paler altogether than examples of *bartteloti* from elsewhere. White (1962) includes the Imatong Mountains within the range of *bartteloti* and notes "darker rufous below" for that race. With more material this very isolated population of the Imatong might be deserving of racial recognition.

Kenya specimens have in the past been referred to *bartteloti* (van Someren 1932; Jackson 1938 and more recently Friedmann & Williams 1970 and Ripley & Bond 1971) and more particularly those from Kakamega and Uganda. Rwanda specimens are much paler than those from Kakamega and Uganda, nearer to the North Nandi specimens, but they are referred to nevertheless as *bartteloti* by Prigogine (1971). White (1962) included West Kenya within the range of *bartteloti*.

For the North Nandi birds we propose a new race:—

***Cossypha cyanocampter pallidiventris* subsp. nov.**

Holotype: adult ♂ Reg. No. 17636/796, in National Museum, Nairobi, Kenya, Field No. 276. Collected on track Kamwega-Kipsamoiti, North Nandi Forest, Kenya, 0° 20'N, 34° 58'E at 2133 m by Naturhistorisches Museum, Wien and National Museum, Kenya Joint Expedition on 17.xi. 1978. Gonads enlarged.

Description: Crown and cheeks black with white supercillium to nape. Back Slate Colour with distinct blue edges to feathers. Rump Dark Olive. Thighs and undertail coverts Honey Yellow. Tail, central pair rectrices black, others with inner web rufous, outer black. Wings black, outer web of primaries and secondaries narrowly edged blue. Angle of wing and lesser wing coverts Yale Blue. Throat and upper breast and flanks Honey Yellow to Yellow Ochre at flanks. Paler mid-breast to belly Deep Colonial Buff to nearly white at crissum. Iris dark brown. Bill black. Legs pinkish-grey to mauve. Altogether paler, yellower than *bartteloti* as represented by birds from Kakamega and Uganda and paler than Rwanda examples. Kakamega and Uganda specimens are Antimony Yellow on throat to Yellow Ochre on breast and the belly is not so white but buffy tinged.

Sub-adults: still with a few buff-tipped feathers on coverts, more olive on the back than adults and slightly more ochreous on the breast and flanks, but white on the lower belly to crissum. Backs of males are slightly darker than females.

Weight and measurements: Wing 85.0 mm, tail 75.0 mm, bill 13.0 mm. Weight 32.0 g. Paratypes: collected at the same site as the holotype between 9.xi and 20.xii.1978. Wings ♂♂, mean 82.4 (81.0–84.0) mm; ♀♀ mean 76.1 (73.0–79.0) mm; sub-adults 74.0 & 79.0 mm. Weights, ♂♂, mean 29.3 (27.0–32.0) g. ♀♀, mean 27.2 (24.4–30.5) g. Sub-adults, 29.0 & 30.0 g.

In addition to the above we have a ♂ topotype taken in another section of the North Nandi Forest by V. C. Fayad on 8.i.1978 with wing 85.0 mm and weight 30.0 g. The finding of *C. cyanocampter* in the North Nandi represents a slight eastward extension of range and in altitude.

NEOCOSSYPHUS POENSIS White-tailed Ant-Thrush

White (1962) does not include any locality in Kenya for this species. Similarly there is no plot shown for Kenya in Hall & Moreau (1970). Zimmerman & Mumford (1965) discuss 3 specimens taken in Kakamega Forest, Western Kenya in 1963 and write "do not agree particularly well with specimens of *praepectoralis* or of the nominate race, their colouration is seemingly somewhat intermediate between the two". Their wings 105.0, 109.0 and 110.0 mm fall within the range of *praepectoralis*. Ripley & Bond (1971) record *N. poensis* erroneously "for the first time", based on birds from Kakamega, 1964-1966.

Zimmerman (1972), who had 8 Kakamega examples, wrote "viewed as a series, Kakamega birds are darker ventrally, with rather distinct olive upper breast and sides of chest and a greyer throat. The undertail coverts tend to be rather more heavily streaked and the spot on the outer rectrix is considerably larger in most Kakamega birds". The average length of the white tail spot was 33.6 for ♂♂ and 34.3 mm for ♀♀. In 5 Kakamega examples in the NMN these spots measure 31.0 and 32.0 mm for ♂♂ and 31.0, 31.0 and 34.0 mm for ♀♀. This character is evidently unreliable for racial distinction and similarly the amount of white on the outer tail feathers (White 1962), as one North Nandi specimen has one outer rectrix with white on the outer web.

If all Uganda birds are *praepectoralis* (see Keith *et al.* (1969) for the Kayonsa (Impenetrable) Forest and Friedmann & Williams (1969, '70, '71, '73) for the Malabigambo, Kalinzu, Bwamba and Budongo Forests), then we would agree with Zimmerman (1972) that the Kakamega birds differ in the way he describes, while the North Nandi examples differ considerably from the Kakamega series and from *praepectoralis*.

The NMN holds 5 Kakamega specimens which we now regard as a good race and we therefore propose that they be known as:—

***Neocossyphus poensis kakamegoes* subsp. nov.**

Holotype: ♂ Reg. No. 12321/802 in National Museum, Nairobi, Kenya, collected in Kakamega Forest near Forest Station, 0° 15'N, 34° 50'E, on 11.xii.1966 by I. Bampton.

Description: Head, with scaly appearance, and back Chaetura Drab. Tail black, white spot on tail 31.0 mm. Throat Buffy Brown, sharply defined from upper breast which is near Brownish Olive. Lower breast Tawny Olive, belly richer rufous but not as intense as in *praepectoralis* (Uganda birds) or birds from North Nandi. Outer web of primaries Rood's Brown.

Weight and measurements: Wing 103.0 mm, tail 88.0 mm, bill 13.0 mm. Paratypes: ♀. Reg. No. 12322/802, collected Kakamega Forest Station on 9.xii.1966 by A. D. Forbes-Watson, wing 107.0 mm. White tail spot 31.0 mm, weight 48.5 g. ♀ Reg. No. 12323/802, collected by A. D. Forbes-Watson at Kakamega Forest Station on 11.xii.1966, wing 113.0 mm, white tail spot 34.0 mm, weight 57.5 g. ♀ Reg. No. 12324/802 collected same place as others, wing 104.0 mm, white tail spot 32.0 mm, weight 56.0 g. All these specimens are recorded as having iris earth brown, bill black, feet pale flesh. In addition one topotypical ♂ Reg. No. 12320/802 from the same locality was collected by A. L. Archer on 20.ii.1973, wing 103.0 mm, white spot 32.0 mm, weight 56.0 g.

Birds from the North Nandi when placed alongside these Kakamega specimens are clearly much darker and we have no hesitation in describing them as:—

Neocossyphus poensis nigridorsalis subsp. nov.

Holotype: ♂ Reg. No. 17592/802 in National Museum, Nairobi, Kenya collected on track 7, swamp area, Kamwega-Kipsamoiti track, North Nandi Forest, Western Kenya, 0° 20'N, 34° 58'E at 2133 m on 12.xii.1978 by Naturhistorisches Museum, Wien and National Museum, Kenya Joint Expedition.

Description: Crown (scaly) and back to upper tail coverts Blackish Brown. Tail Jet Black, outer rectrix white spot 31.0 mm. Throat slightly paler than breast, Tawny Olive, slightly scaly in appearance. Belly Dresden Brown with flanks Antique Brown, not as rich rufous as *praepectoralis*. Outer web of primaries Walnut Brown compared with Russet of *praepectoralis*. Undertail coverts each with a dark shaft and narrow dark fringe of Antique Brown. Iris recorded as brown-chestnut, bill black. Legs pinkish with grey tinge.

Weight and measurements: Wing 112.0 mm, tail 98.0 mm, white spot on tail 31.0 mm, bill 14.0 mm, weight 48.0 g. Paratypes: All from the same area of Kamwega Kipamoiti, North Nandi Forest, collected on dates between 9.xi and 20.xii.1978 by the joint expedition. ♂ Reg. No. 17593/802, wing 102.0 mm, white spot 34.0 mm, weight 50.0 g. ♀ Reg. No. 17595/802, non-breeding, wing 50.0 mm, white spot 33.0 mm, weight 50.5 g. ♀ Reg. No. 17494/802 111.0 mm, white spot 30.0 mm, weight 55.5 g. In addition, one topotype ♂ was collected by V. C. Fayad in the same forest on 5.i.1978, Reg. No. 17196/802, wing 105.0 mm, white spot 33.0 mm, weight 55.0 g. Another series taken in 1979 in the same forest but further south near Chemisia, 0° 15'N, 35° 00'E, match the type series.

These new races have been compared directly with specimens from the Budongo, Malabigambo, Kayonsa and Bwamba Forests, all low country forests between 1000 m and 1370 m. The highland race from the North Nandi is by far the darkest. Kakamegoes is the original orthography.

BLEDA SYNDACTYLA Bristlebill

We have compared our North Nandi birds with specimens from the Kakamega Forest and the forests of Uganda. Most recent writers have referred birds from Kakamega and Uganda to the race *woosnami* of Ogilvie-Grant (Keith *et al.* (1969), Friedmann & Williams (1969, '70, '71, '73) for Uganda forests, Ripley & Bond (1971) for Kakamega, and Zimmerman (1972)). The type locality of *woosnami* is the Mpanga Forest (=Kibale) of Uganda.

When a series is laid out it becomes instantly apparent that the North Nandi birds are decidedly greener, darker on the dorsal surface and brighter altogether ventrally. We see little difference between birds from Kakamega and Uganda, though in series the latter appear more brownish olive on the back.

We feel these North Nandi birds deserve sub-specific distinction and therefore describe them as:—

Bleda syndactyla nandensis subsp. nov.

Holotype: ♂ Reg. No. 17603/692, Field No. 54, in National Museum,

Nairobi, Kenya. Collected on track 3 off the road Kamwega-Kipsamoiti, North Nandi Forest, Western Kenya, $0^{\circ} 20'N$, $34^{\circ} 58'E$ at 2133 m on 9.xi.1978 by Naturhistorisches Museum, Wien and National Museum, Kenya Joint Expedition.

Description: Throat distinct Lemon Yellow. Breast to belly Empire Yellow. Flanks and sides of upper breast Warbler Green. Back dark Greenish Olive. Intense black streak below eye. Head dark, but only just darker than back, Olivaceous Black. Inner web of primaries almost black with greenish outer web. Tail rich Rufous. Iris red-brown, eye-ring light blue. Upper bill dark horn, lower pale bluish. Legs pinkish flesh tinged brown. For comparison with Kakamega birds we record colours as follows:—Throat Picric Yellow, belly Lemon Yellow, flanks Citrine, back Brownish Olive. Head distinctly darker than the back which is Olivaceous Black, wings dark greyish-brown with grey outer webs. There is a dark streak below the eye.

Weight and measurements: Wing 109.0 mm, bill 21.0 mm, tail 100.0 mm, weight 47.5 g. Paratypes: ♂ Reg. No. 17604/692, gonads enlarging, wing 112.0 mm, bill 21.0 mm, weight 48.0 g. ♂ Reg. No. 17605/692, gonads large, wing 105.0 mm, bill 21.5 mm, weight 45.4 g. ♀ Reg. No. 17607/692, slight ovarian development, wing 101.0 mm, bill 18.0 mm, weight 45.0 g. ♀ Reg. No. 17608/692, non-breeding, wing 102.0 mm, bill 20.0 mm, weight 40.0 g. All collected in the same area as holotype between 9.xi and 20.xii.1978. All in NMN. A further series of 5 specimens taken in 1979 in the same forest but further south near Chemisia, $0^{\circ} 15'N$, $35^{\circ} 00'E$, match the type series.

Measurements are of interest and Bergman's Rule applies in that the high altitude North Nandi birds at 2133 m run larger than the Kakamega (300 m lower) and Uganda specimens. Mean for North Nandi ♂♂, 108.6 (105–112.0) mm, ♀♀ 101.5 (101.0–102.0) mm while 6 Kakamega ♂♂ have mean 103 (99.0–107.0) mm and ♀♀ mean 100.0 (98.5–102.0) mm. Uganda ♂♂ have mean 103.0 (98.0–110.0) mm, ♀♀ mean 95.0 (93.0–98.0) mm. The Uganda specimens are from the low lying Bwamba Forest (c. 1000 m) and 2 from Kibale Forest (c. 1525 m).

PHYLLASTREPHUS PLACIDUS Placid Greenbul

Dowsett (1972) has clarified the relationships of *P. cabanisi*, *P. placidus* and *P. fischeri*. In the past the highland or montane Kenya birds have been assigned to *P. fischeri cabanisi* (e.g. Ripley & Bond 1971) or *P. cabanisi sucosus* (Zimmerman 1972), particularly those birds from the Kakamega Forest, which now, following Dowsett, should be *P. placidus sucosus*.

It was natural that we should firstly compare our long North Nandi series with birds from Mount Elgon, Kakamega and Kapenguria, then with examples from elsewhere. It was quickly apparent that the North Nandi series differed markedly from birds from all other localities, firstly being bright yellow on the belly with a clear pale throat and dark chest, but with a striking feature to be seen in the remiges, the outer webs of which were Buffy Citrine and the inner virtually black without any trace of the Brussels Brown of birds from Kakamega and Kapenguria. A single male from Mount Elgon approaches the North Nandi birds but the coverts are brownish and not Olive Green. On the ventral surface the Elgon example is not as bright as the Nandi, and the Kakamega specimens also are duller.

We are unable to match the North Nandi birds with those from Rapogi,

Kilgoris, Ngare Ngare to the Nguruman Range, South Western Kenya or birds from Equator, Mau Narok or Mau Escarpment, west of the Rift Valley and propose to designate the North Nandi birds as a new race, as

***Phyllastrephus placidus nandensis* subsp. nov.**

Holotype: ♂, Reg. No. 17662/685, Field No 229, in National Museum, Nairobi, Kenya, collected on track from Kamwega to Kipsamoiti, North Nandi Forest, Western Kenya, 0° 20'N, 34° 58'E at 2133 m on 16.xi.1978 by Naturhistorisches Museum, Wien and National Museum, Kenya Joint Expedition.

Description: Iris recorded as pale brown, bill dark horn paler at tip and tomium, lower mandible with pale base. Legs dark olive-grey. Head, crown to nape, dark Greenish Olive with a slightly scaly appearance due to narrow pale fringe to each feather. Back to rump, Olive, paler than the head. Rump lighter olive. Upper tail coverts Tawny Olive to Yellowish Olive. Tail dorsal surface light Brownish Olive to Sepia at shaft, undersurface Medal Bronze. Chin and throat Martin's Yellow. Sides of breast, Kronberg Green wash. Central belly to vent Picric Yellow with some slightly darker or denser streaks at upper breast of yellow. Wings, primaries and secondaries Buffy Olive edged to Buffy Citrine, inner webs almost black. Wing coverts similar to back.

Thus the back of the North Nandi bird is green, that of *sucosus* from other localities has a brownish wash. The wings of *sucosus* are brown and the rectrices more chestnut, throat and belly not so yellow, flanks paler. In the North Nandi birds the dark colour forms a distinct band across the chest. Specimens from the Nguruman Range are not quite so yellow, browner on the wings but otherwise similar, though distinct. Kapenguria examples are duller on the ventral side and have brownish wings, while birds from Equator are nearer *placidus*. All races are brighter than examples from Ngare Ngare.

Weight and measurements: Wing 80.0 mm, tail 77.0 mm, bill 15.0 mm, weight 25.5 g. Paratypes: 24 ♂♂ and 21 ♀♀. Sexes alike. All taken at the same site as holotype between 9.xi and 20.xii.1978. Wings ♂♂, mean 80.4 mm (78.0-85.0) mm; ♀♀, mean 76.2 (70.0-77.0) mm. Tails ♂♂, 77.0-85.0 mm; ♀♀, 68.0-84.0 mm. Wing/tail ratio, ♂♂, 98.2, ♀♀, 103.9. There is no consistency between wing/tail measurements: in ♂♂ 16 had tails shorter and 7 longer than ♀♀, ranging from 4.0 mm longer to 7.5 mm shorter. In ♀♀ the tails of 11 were shorter and 9 were longer than ♂♂, ranging from 10.0 mm longer to 6.0 mm shorter (cf. Dowsett 1972). Another series of 17 specimens secured in 1979 from the same forest near Chemisia match the type series.

The birds from the Nguruman Range, an isolated, well forested range rising to c. 2400 m, south of the Mau, west of the Rift Valley, as noted above show some similarity to the North Nandi race and we consider them worthy of recognition as

***Phyllastrephus placidus ngurumanensis* subsp. nov.**

Holotype: ♂, Reg. No. 16438/685, in National Museum, Nairobi, Kenya, from Kipurses, Nguruman Range, Kenya 1° 33'S, 36° 10'E, at 1500 m, collected 9.xi.1976 by V. C. Fayad.

Description: Data recorded gave iris dark brown, bill brownish yellow and feet grey. Head, with faint scaly appearance and back down to rump Olive Citrine. Upper tail coverts Sepia. Upper tail surface Sepia. Chin, throat

pale, streaked with Barium Yellow. Upper breast Olive streaked with Barium Yellow, the olive forming a band across the chest. Lower breast to belly streaked Barium Yellow, more extensive towards the crissum, yellower at mid-belly. Flanks dull Citrine. Undertail coverts yellowish. Wings, primaries and secondaries edged Dresden Brown, inner web of primaries almost black. Coverts Olive Brown. Sexes alike. On the ventral surface not as bright as birds from North Nandi and the breast band not so pronounced.

Weight and Measurements: Wing 83.5 mm, tail 78.0 mm, bill 15.0 mm, weight 23.0 g. Paratypes: ♀, Reg. No. 16440/685 from Kipurses, 12.xi.1976, wing 79.0 mm, tail 88.0 mm, weight 20.5 g. ♂, Reg. No. 16439/685 from Kipurses, 13.xi.1976, wing 88.0 mm, tail 87.0 mm. Both collected by V. C. Fayad. Additional examples: ♀ Reg. No. 12960/685 from Olengakuala Stream, Nguruman Range collected 14.iv.1976, wing 76.0 mm, tail 73.0 mm. ♂, Reg. No. 12959/685 from Olengakuala Stream, 14.iv.1976, wing 84.0 mm, tail 82.0 mm, weight 26.0 g. ♂, Reg. No. 12961/685, 18.iv.1976, wing 83.0 mm, tail 80.0 mm, weight 28.0 g. All collected by T. O. Osborne and in NMN.

SPERMOPHAGA RUFICAPILLA Red-headed Bluebill

We carefully compared our North Nandi series with material from elsewhere in Kenya and find little difference. However, we did find in the NMN a small series of birds collected at Kilgoris, near Kisii, Western Kenya with a distinctly different plumage particularly with respect to the sub-adults. Kilgoris is an interesting locality, for to-day most of the forested areas have been cleared and only riverine gallery forest remains in a few scattered locations. In a direct comparison with *S.r. ruficapilla* we find the following differences:—

Kilgoris	Kakamega & Nandi
♂ Back, Dull Slate Black	Plumbeous Black with a sheen
♀ Back, Dark Mouse Grey, dull	Deep Neutral Grey
♂ Head, Nopal Red	Nopal Red
♀ Head, Nopal Red	Scarlet Red
♀ Belly, White spots on grey	white spots on black

In addition, the bills of the Kilgoris birds are fractionally (1–2 mm) shorter and stubbier.

However, it is in the sub-adult that the differences are more striking. The Kilgoris male has the chest Prout's Brown above intermingled greyish-brown on the lower belly, whereas *ruficapilla* of the same age (from Nandi and Kakamega) is Mummy Brown (darker) over Chaetura Black. Both sub-adults compared had the first red crown feathers just appearing.

We therefor propose to designate a new sub-species:—

Spermophaga ruficapilla kilgoris subsp. nov.

Holotype: Sub-adult ♂, Reg. No. 14049/1106, in National Museum, Nairobi, Kenya, collected at Kilgoris, South West Kenya, on 8.ii.1963. Collector unknown.

Description: Wing 69.0 mm. Crown to nape Chaetura Drab tinged brownish. Back Fuscous Black. Tail black. Throat to upper breast Prout's Brown. Lower breast and belly, mixed, almost speckled, Prout's Brown and Fuscous Black. Bill stubby, blue-black with tomium pinkish. Paratypes: Adult ♂, Reg. No. 14037/1106. Back and belly Slate Black. Head to nape, breast Nopal Red. Bill iridescent bluish, tomium and base of upper bill pinkish,

tip pink. Collected at Kilgoris, 15.ii.1963. Collector unknown. Weight 26.0 g. Wing 68.0 mm. ♀, Reg. No. 14043/1106. Head, nape, breast and flanks Nopal Red. Belly with rounded white spots on light grey background. Back, dark Mouse Grey, very dull. Collected at Kilgoris, 24.i.1963, collector unknown. Wing 67.5 mm. ♀, Reg. No. 14048/1106, as above, collected 3.ii.1963. Wing 65.0 mm. Weight 24.0 g. ♀, Reg. No. 14048/1106, as above, collected Kilgoris on 20.i.1963. Wing 65.0 mm. All specimens in National Museum, Nairobi.

Mackworth-Praed & Grant (1957) state "juvenile is sooty black above and rather browner below, bill as in adult". This is erroneous as all juveniles have black bills and the blue iridescent bill is not assumed until the bird is an advanced sub-adult and the first red feathering of the head has appeared. This is very clear from our long series taken at North Nandi of juveniles and sub-adults. The gape in the juveniles is yellow, the palate has 3 blackish spots in triangle formation and there are 2 upper and 2 lower gape papillae, yellow in colour.

Acknowledgements: We would like to thank V. C. Fayad and T. O. Osborne for donating their specimens to the National Museum on completion of their research projects. We also gratefully acknowledge the cooperation of overseas museums in providing comparative material. We acknowledge the help given by C. W. Benson who read and commented on the original typescript and particularly we wish to thank J. F. Monk for his patience and for much editing.

References:

- Benson, C. W. 1946. Notes on the birds of Southern Abyssinia. *Ibis* 88 (4): 180-250.
 Cave, F. O. & MacDonald, J. D. 1955. *Birds of the Sudan*. Oliver & Boyd: London.
 Chapin, J. P. 1953. The birds of the Belgian Congo. *Bull. Amer. Mus. Nat. Hist.* Vol 75A: 498-500.
 Dowsett, R. J. 1972. Is the bulbul *Phyllastrephus placidus* a good species? *Bull. Brit. Orn. Cl.* 92(5): 132-138.
 Friedmann, H. 1966. A contribution to the ornithology of Uganda. *Bull. Los Angeles County Mus. Nat. Hist., Science* 3: 1-55.
 — 1967. Results of the 1966 Cheney expedition to Samburu district, Kenya. *Ornithology. Los Angeles County Museum Contrib. Sci.* 174: 1-34.
 Friedmann, H. & Stager, K. E. 1969. Results of the Avil expedition to Mt. Nyiru, Samburu District, Kenya. *Ornithology. Los Angeles County Museum. Contrib. Sci.* 174: 1-30.
 Friedmann, H. & Williams, J. G. 1970 a. Birds of the Kalinzu Forest, South West Ankole, Uganda. *Los Angeles County Museum. Contrib. Sci.* 195: 1-27.
 — 1970 b. Additions to the known avifauna of the Bungoma Kibale and Impenetrable Forests, West Uganda. *Los Angeles County Museum. Contrib. Sci.* 198: 1-20.
 — 1971. The birds of the Lowlands of Bwamba, Toro Province, Uganda. *Los Angeles County Museum. Contrib. Sci.* 211: 1-70.
 — 1973. The birds of the Budongo Forest, Bunyoro Province, Uganda. *J. East. Afr. Nat. Hist. Soc.* 141.
 Hall, B. P. & Moreau, R. E. 1970. *An Atlas of Speciation in African Passerine Birds*. London: British Museum (Nat. Hist.).
 Jackson, F. J. 1938. *Birds of Kenya Colony and the Uganda Protectorate*. London: Gurney and Jackson.
 Keith, S., Twomey, A., Friedmann, H. & Williams, J. G. 1969. The Avifauna of the Impenetrable Forest, Uganda. *Amer. Mus. Novit.* 2389: 1-41.
 Mackworth-Praed, C. W. & Grant, C. H. B. 1957. *African Handbook of Birds. Eastern and North Eastern Africa*. Vol. 2 (2nd ed). London: Longmans, Green.
 Moreau, R. E. 1951a. Relationships in *Pseudoalcippe*. *Ibis* 93(1): 138-139.
 — 1951b. Geographical variation and plumage sequence in *Pogonochila*. *Ibis* 93(3): 383-401.
 Prigogine, A. 1971. Les oiseaux de L'Itombwe et de son hinterland. *Ann. Sci. Zool. Tervuren* 8(185): 1-298.

- Ripley, S. D. & Bond, G. M. 1971. Systematic notes on a collection of birds from Kenya. *Smithsonian Contributions to Zoology*. No 111.
- Slater, W. L. 1930. *Systema Avium Aethiopicarum*. Pt II: 305-922.
- van Someren, V. G. L. 1932. *Novitates Zoologicae*. 37: 380.
- 1939. Birds of the Chyulu Hills. *J. E. Afr. & Uganda Nat. Hist. Soc.* 14: 75-77.
- White, C. M. N. 1962. A revised check list of African shrikes &c. Lusaka: Dept. of Game & Fisheries.
- Zimmerman, D. A. 1972. The Avifauna of the Kakamega Forest, Western Kenya, including a bird population study. *Bull. Amer. Mus. Nat. Hist.* Vol 149: 257-339.
- Zimmerman, D. A. & Mumford, R. E. 1965. First specimens of three species of birds from Kenya. *Auk* 82(3): 282-283.

Postscript: In the first part of this paper (101(3): 384) we described a new race of the Olive Thrush from North Nandi Forest, Western Kenya as *Turdus abyssinicus fuscatus*, type locality Kipsamoiti-Kamwega, 0°20'N, 34°58'E. Dr. Wolters of Museum Alexander Koenig in Bonn, Germany has kindly pointed out that this name is pre-occupied by *Turdus fuscatus* Vieillot, Hist. Nat. Oiseaux Amer. Sept. 2, t. 57, 1808, (= *Margarops fuscatus* (Vieillot), Mimidae) and by *Turdus fuscatus* Pallas, Zoogr. Rosso-Asiat., 1, Taf. 12, 1811, (= *Turdus naumanni eunomus* Temm.). We therefore propose

***Turdus abyssinicus porini* nomen novum**

for *T. a fuscatus* C-van Someren & Schifter. Etymology from Kiswahili, *pori*=a forest thus *porini*=of the forest.

Address: G. R. Cunningham-van Someren, National Museums of Kenya, Section of Ornithology, P.O. Box 40658, Nairobi, Kenya.

H. Schifter, Naturhistorisches Museum, Postfach 417, 1014 Wien, Austria.

©British Ornithologists' Club 1981.

Notes on some Surinam birds

by J. Ingels

Received 22 January 1981

Since publication of *Birds of Surinam* (Haverschmidt 1968), additions to the Surinam avifauna have been reported by Mees (1968, 1973, 1974, 1976, 1977), Renssen (1974a), de Jong and Holthuijzen (1977), Trail (1978) and Davis (1979). Lists with additional information on Surinam birds have also been published since by Haverschmidt (1972, 1975), Renssen (1974b) and Spaans (1978 a & b).

These notes present observations on occurrence, habitat preference, nesting behaviour, breeding seasons or feeding behaviour of 17 species of Surinam birds. They extend Haverschmidt (1968) and are given his numbering, and were obtained during 2 visits of 4 weeks to Surinam in April 1979 and April 1980. A group of Dutch ornithologists including Dr. A. L. Spaans were involved in observations of 1979 indicated with an *. Most data were collected in the Brownsberg and Raleighfalls-Voltzberg nature reserves managed by Stinasu (Foundation for Nature Preservation in Surinam).

SPECIES OBSERVED

3. *Crypturellus soui* Little Tinamou. On 25 April 1979, I was shown a nest of this tinamou by a member of the Stinasu staff on Brownsberg. Two glossy reddish violet eggs lay in a scrape in dead leaves on the ground among very dense vegetation covering a bank, approximately 0.5 m away from the higher

edge of a trail in sloping forest (see Plate). The incubating tinamou sat very tight, only leaving the eggs when a hand was stretched out in its direction. The eggs measured 43.2×32.8 and 43.8×33.0 mm, which is wider than reported by Haverschmidt (1968).

20. *Ardeola* (= *Bubulcus*—Hancock & Elliott 1978) *ibis** Cattle Egret. A recent, well-known nesting colony, protected by Stinasu, is situated in bushes on the left bank of the Suriname river in Paramaribo, where the Sommeldijksche creek discharges into that river (beside the Hotel Torarica). On 8 April 1979, breeding activity consisted mainly of nest building; egrets with nesting material (twigs, sticks) were arriving continually at the colony. Only some nests were occupied by incubating egrets and probably a very few nests contained newly hatched young. On 1 May, nesting activity had greatly increased; building by now was restricted to a few nests on the fringe of the colony, and most nests were occupied by incubating egrets; feeding of small nestlings was witnessed and a few immature egrets with typical greyish bills pottered about in the colony. Around that date, the nesting colony was obviously at its maximum activity, i.e. nearly all nests contained eggs or young. On the other hand, during April 1980, no nesting activity was observed in the colony and few egrets were present in and around the bushes. Haverschmidt (1968) mentions that the main rainy season (mid April–mid August) is the nesting period of this egret in Surinam.

171. *Leptotila rufaxilla** Grey-fronted Dove. On 14 April 1979, I found a nest of this dove with 2 white, slightly incubated eggs. The flimsy platform of sticks was placed approximately 2.5 m high in dense shrubbery interlaced with spiny vines, 2 m away from the so-called plateau road on Brownsberg. The eggs could be seen through the nest platform. They measured 29.3×21.1 and 29.5×21.6 mm, agreeing well with measurements reported by Haverschmidt (1968, 1972). This dove had only been found breeding in January by Haverschmidt, although nesting throughout the year as in the White-tipped or White-fronted Dove *Leptotila verreauxi* is plausible.

The Grey-fronted Dove is more of a forest bird than the White-fronted, but there is some overlap. They are fairly readily separated in the field by the colour of the naked loreal and orbital skin: reddish in *rufaxilla*, bluish in *verreauxi* (Ingels 1981a). Near Voltzberg, I found White-fronted Doves to be rather common on a large, flat granite outcrop with scattered vegetation which was entirely surrounded by lowland rainforest and where Grey-fronted Doves were absent.

172. *Geotrygon montana** Ruddy Quail-Dove. On 15 April 1979, I found a nest with 2 cream-coloured eggs next to a forest trail on Brownsberg. The nest was situated on top of a mass of entangled tree roots and vines, at the base of a large tree, approximately 0.3 m above the forest floor. It was merely a scrape lined with some fresh leaves, in a mat of dead leaves. The eggs measured 26.4×19.2 and 26.5×19.5 mm, well within the limits given by Haverschmidt (1968).

On 16 April (9 a.m.), I found one half of an eggshell and 2 newly hatched, still wet squabs in the nest. They had a pinkish skin, rather long yellowish down and a greyish bill. On 24 April, all pterylae were covered with sprouting pin feathers, with down restricted to coronal and spinal tracts. Remiges and rectrices were almost fully grown and their bills had turned blackish. On 26 April both were already well feathered, with pin feathers tipped with down



Fig. 4. Nest (arrow) of a White-necked Thrush *Turdus albicollis* on Brownsberg, Surinam. (Photo J. Ingels)

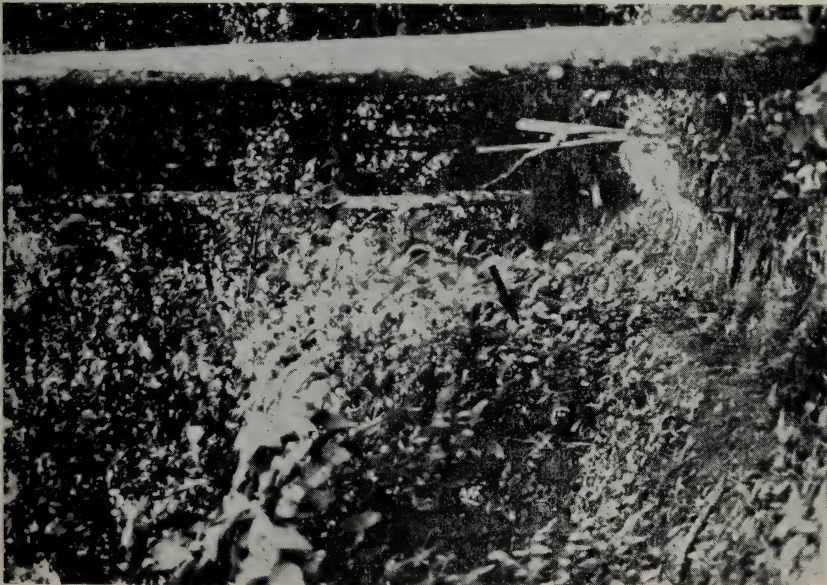


Fig. 1. Nest site (arrow) of Little Tinamou *Crypturellus soui* on Brownsberg, Surinam. (Photo J. Ingels)



Fig. 2. "Nest" with egg (arrow) of a Blackish Nightjar *Caprimulgus nigrescens* on the 2nd granite plateau near Voltzberg, Surinam. (Photo J. Ingels)



Fig. 3. Slits (arrows) in the calyx of a withered flower of a Queen-of-the-Night cactus *Cereus hexagonus*, pierced by a Black-eared Fairy *Heliothryx aurita*, near Voltzberg, Surinam. (Photo J. Ingels)

fluffs on the head only. Both were ♀♀ as the dull brown juvenal body feathers and wing coverts were edged rufous (Goodwin 1970). On 27 April (11.30 a.m.) both had left the nest, giving a nestling period of 11 days, in close agreement with observations by Skutch (1949).

184. *Forpus passerinus* Green-rumped Parakeet. On 4 April 1980, I observed a pair of these parakeets alighting in the crown of a kankantri tree *Ceiba pentandra* in the new grounds of the University of Surinam. The ♀ entered a horizontal hollow dead stump, and after a while the ♂ flew off. After half an hour, the ♀ was still in the nest hole, probably incubating or brooding small nestlings. This behaviour confirms similar observations by Haverschmidt (1975).

190. *Pionus menstruus* Blue-headed Parrot. On 24 April 1979, the manager of Brownsberg (where this parrot is common), showed me a juvenile. It had fallen to the forest floor upon leaving the nest hole. Differences in comparison with the adult colour pattern (Forshaw 1973) were: general plumage pale green, head and neck greenish, narrowly edged with blue, forehead reddish blue, breast feathers rosy, edged with bluish green, ear-coverts dull bluish grey, under tail-coverts yellowish green marked with rose, wing-coverts yellowish green, bill dark horn colour with a soft, thickened yellowish red base to the upper mandible, iris black, legs, feet and cere slate coloured.

223. *Caprimulgus nigrescens** Blackish Nightjar. This widespread nightjar breeds during both dry seasons (mid February–mid April, mid August–mid November) in Surinam (pers. obs.). The pronounced preference of this nightjar for rocky areas, especially granite outcrops in rainforest is a unique feature among neotropical caprimulgids. Large numbers live and breed on 2 flat granite outcrops with scattered vegetation near Voltzberg (Ingels 1981b).

On 19 April 1979 and 8 April 1980, I found 3 and 1 "nests" respectively, with one egg in each, on the second granite plateau near Voltzberg; 2 lay in slight depressions on bare rock, 2 lay amidst debris of dead branches of *Clusia* bushes, one of these latter on bare rock, the other on a thin layer of humus (see Plate). On 26 April 1979, I found a "nest" with one egg on the reddish gravel of an open site on Brownsberg. All nest sites were exposed to full sun. The eggs were remarkably conspicuous on the dark granite or reddish gravel when the incubating nightjar was off the nest.

The eggs measured: 24.3 x 17.3, 25.6 x 18.6, 25.9 x 18.7, 25.1 x 18.3 and 25.2 x 18.5 mm. They are slightly glossy and have a creamish to pinkish buff ground colour with brown spots and underlying brownish grey spots and blotches. Markings are irregularly formed, with different shades and uneven colour intensity and are fairly uniformly distributed over the entire egg. The ends of an egg differ little, both being almost equally blunt.

255. *Topaza pella** Crimson Topaz. This marvellous hummingbird is more common in Surinam than is generally accepted (Akrum pers. comm.).

On the same granite outcrop near Voltzberg mentioned under *Caprimulgus nigrescens*, I observed on 19 April 1979, two ♂♂ occupying feeding territories, consisting of clumps of flowering *Pitcairnia nuda*, a common bromeliad on these granite outcrops. Territories were defended against the common Grey-breasted Sabrewings *Campylopterus largipennis*. The smaller Fork-tailed Woodnymphs *Thalurania furcata* were normally allowed to feed from flowers at the edge of the territory, but not in the centre. On 3 successive days, one ♂

was observed in its feeding territory between 7 a.m. and approximately 1 p.m., after which it disappeared into the surrounding rainforest.

256. *Heliothryx aurita* Black-eared Fairy. In April 1980, flowers were scarce on and around the granite outcrops near Voltzberg. Few hummingbirds were present.

This hummingbird was first seen on 14 April 1980, when a ♂ came to feed at the umbels of small flowers of an understory shrub growing around the Stinasu camp. On 15 April, I observed a ♂ piercing the calyx bases of withered flowers of the Queen-of-the-Night *Cereus hexagonus*, a common cactus on the granite outcrops. These flowers last only one night, and at dawn most have already withered. On examination, I found that some flowers had up to 8 slits (see Plate). At its base, the fleshy calyx wall is between 2 and 3 mm thick and the hummingbird was observed to really "force" its bill into the flower base. This hummingbird may have tried to exploit this possible nectar source because other flowers were scarce.

374. *Pithys albifrons** White-plumed Antbird. On 19 April 1979, I found the first recorded nest for Surinam of this antbird and only the second for the species (Willis 1972). It was situated in the low crown of a prickly palm *Bactris* sp. next to a forest trail in the Raleighfalls-Voltzberg nature reserve. A detailed description of the nest and eggs of this antbird has been published (Ingels 1980).

420. *Fluvicola pica* Pied Water-Tyrant. On 21 April 1979, I saw this water-tyrant collecting billfuls of "seed cotton" from an ornamental shrub in a garden in Paramaribo. Apparently, it lines its nest not only with feathers (Haverschmidt 1968), but also with seed fluff.

506. *Turdus albicollis* White-necked Thrush. On 22 April 1980, I found a nest of this thrush with 2 young between 2 and 4 days old, on Brownsberg. The nest was built at a height of 1.10 m in an oblong niche-like hole in a large, moss-covered forest tree next to a forest trail. The cup-shaped nest was situated on top of a pile of green living moss (see Plate) of which the outer wall was composed. The cup, with a diameter of 9 cm and 5.5 cm deep, was lined with dark plant fibres and rootlets. On approaching the nest, the adults, which were hidden in the undergrowth, uttered the typical alarm call of Turdidae, a prolonged "tseeet", described by Skutch (1960) as "a full, mellow, mournful whistle".

Both young had orange flesh-coloured skin, and intense orange-red gapes. On 22 April, the nestlings weighed 20.5 and 10.0 g and on 24 April, 31.5 and 19.5 g respectively. The adults weighed 54.0 and 58.5 g, both weights easily exceeding the maximum of 47 g given for this thrush by Haverschmidt (1968), but in complete agreement with data presented by French (1973).

Deep body temperatures (for the method used in measuring DBTs see Ingels 1981b) of both adults were 42.6° and 43.4°C, corresponding with the high body temperatures found in other neotropical thrushes by Oniki (1972). On 23 and 24 April, DBT of both young measured at noon, after a period of half an hour of lying exposed in the nest to an air temperature of 24–25°C, were: older one, 36.8° and 39.2°C; younger one, 35.5° and 37.9°C respectively. With a probable nestling period of 15–17 days as in other neotropical *Turdus* species, nestlings of this thrush should be able to regulate their body temperature to that of an adult only by the age of 8–11 days (Ricklefs & Hainsworth 1968).

On several occasions, I saw the adults feeding insects, worms and red berries (c. 13 x 10 mm) to the young. The (regurgitated?) single brownish black seeds (approximately 9 x 6 mm) were afterwards found in the nest.

524. *Dacnis cayana** Blue Dacnis. On 12 April 1979 I observed a pair of this dacnis with 2 juveniles in the savanna around the Jan Starke camp of the Surinam Forest Service near Zanderij. They were among a mixed flock of Red-legged Honeycreepers *Cyanerpes cyaneus*, Rufous-crowned Tanagers *Tangara cayana*, Blue-grey Tanagers *Thraupis episcopus* and Palm Tanagers *Thraupis palmarum*, all hawking winged ants leaving their arboreal nest after a rain shower. The insects were also fed to the juveniles. Observation of a family party of this dacnis in this period of the year is not surprising, as the November to April period is the main reproductive season of Thraupinae in Surinam (Haverschmidt 1968).

I was also able to confirm with sight records 4 species not mentioned in Haverschmidt (1968), but already added to the birdlist of Surinam by subsequent publications.

Avocettula recurvirostris Fiery-tailed Aowlbill. The presence of this hummingbird has been recorded by Trail (1978). On 19 April 1979, I observed a ♂ for about 5 min, foraging among purple leguminaceous flowers on a granite outcrop near Voltzberg. Its feeding behaviour, food flowers and colour pattern correspond with the detailed description by Trail.

*Corapipo gutturalis** White-throated Manakin. The presence of this manakin has been recorded for Brownsberg and Nassau mountains (Mees 1974, Kluyver 1975). On 16 April 1979, a flock of c. 10 manakins, mostly ♂♂ with only a few juveniles or ♀♀, was observed displaying in a low tree about 5 m high, half-way along the road to the Brownsberg plateau.

*Piranga flava** Hepatic Tanager. Mees (1974) reported and discussed the presence of this tanager in Surinam. On 16 April 1979, a pair was seen on Brownsberg, high up in a dead tree on the forested slope towards the weir near Afobaka.

Cissopis leveriana Magpie Tanager. Penard & Penard (1910) include "the Guyanas" in the distribution range of this tanager. It has been observed regularly on Foengoe island by independent observers (Davis 1979, Spaans pers. comm.). On 7 April 1980, I observed for over 15 min 2 tanagers foraging in low vegetation at the inland end of the airstrip on that island. These magpie-like tanagers are unmistakable in the field.

Acknowledgements: I am greatly indebted to Dr. A. L. Spaans (Research Institute for Nature Management, Holland) and Dr. J. H. Ribot (University of Surinam) for their personal communications, critical reading of these notes and companionship in the field in 1979 and 1980 respectively. I am grateful to Dr. I. A. Akrum and R. O. Determann for sharing their general knowledge of Surinam birds and plants with me, and to A. J. Mobbs for his help in various ways. I much appreciated the cooperation of the staff of STINASU during my field work.

References:

- Davis, T. H. 1979. Additions to the Birds of Suriname. *Continental Birdlife* 1: 136-146.
 de Jong, B. H. J. & Holthuijzen, A. M. A. 1977. Cliff Flycatcher *Hirundinea ferruginea*, a new species for the Surinam list. *Ardea* 65: 203.
 French, R. 1973. *A Guide to the Birds of Trinidad and Tobago*. Livingston Publishing Cy.: Wynnewood (Pa.).
 Forshaw, J. M. 1973. *Parrots of the World*. Lansdowne Press: Melbourne.
 Goodwin, D. 1970. *Pigeons and Doves of the World*. British Museum (Natural History) & Cornell University Press: London & Ithaca.
 Hancock, J. & Elliott, H. F. I. 1978. *The Herons of the World*. London Editions Ltd.: London.

- Haverschmidt, F. 1968. *Birds of Surinam*. Oliver & Boyd: Edinburgh.
- 1972. Bird records from Surinam. *Bull. Brit. Orn. Cl.* 92: 49–53.
 - 1975. More bird records from Surinam. *Bull. Brit. Orn. Cl.* 95: 74–77.
- Ingels, J. 1980. A nest of the White-plumed Antbird (*Pithys albifrons*) in Surinam. *Auk* 97: 407–408.
- 1981a. Separation in the field of White-fronted and Grey-fronted Doves (*Leptotila verreauxi* and *Leptotila rufaxilla*). *Bonn. Zool. Beitr.* 32: in press.
 - 1981b. Aspects of the nonbreeding biology of the Blackish Nightjar *Caprimulgus nigrescens* in Surinam. (To be published.)
- Kluyver, H. N. (ed.). 1975. *De vogels van de Brownsberg*. Natuurgids serie B, No. 3. STINASU: Paramaribo.
- Mees, G. F. 1968. Enige voor de avifauna van Suriname nieuwe vogelsoorten. *Gerfaun* 58: 101–107.
- 1973. *Contopus albogularis* (Berlioz) (Aves, Tyrannidae). *Proc. Kon. Ned. Akad. Wet. series C*, 76: 465–475.
 - 1974. Additions to the avifauna of Suriname. *Zool. Med.* 48: 55–67.
 - 1976. Mass mortality of *Puffinus gravis* (O'Reilly) on the coast of Suriname (Aves, Procellariidae). *Zool. Med.* 49: 269–271.
 - 1977. Zur Verbreitung von *Phaethornis malaris* (Nordmann) (Aves, Trochilidae). *Zool. Med.* 52: 209–211.
- Oniki, Y. 1972. Some temperatures of Panamanian birds. *Condor* 74: 209–215.
- Penard, F. P. & Penard, A. P. 1910. *De vogels van Guyana II*. Nijhoff: 's-Gravenhage.
- Renssen, T. A. 1974a. Twelve bird species new for Surinam. *Ardea* 62: 118–122.
- 1974b. New breeding records from Surinam. *Ardea* 62: 123–127.
- Ricklefs, R. E. & Hainsworth, F. R. 1968. Temperature regulation in nestling Cactus Wrens: the development of homeothermy. *Condor* 70: 121–127.
- Skutch, A. F. 1949. Life history of the Ruddy Quail-Dove. *Condor* 51: 3–19.
- 1960. *Life Histories of Central American Birds II*. Pacific Coast Avifauna No. 34.
- Spaans, A. L. 1978a. Status and numerical fluctuations of some North American waders along the Surinam coast. *Wils. Bull.* 90: 60–83.
- 1978b. Status of terns along the Surinam coast. *Bird-Banding* 49: 66–76.
- Trail, P. W. 1978. Sight records of two species new for Surinam. *Ardea* 66: 184–185.
- Willis, E. O. 1972. Breeding of the White-plumed Antbird (*Pithys albifrons*). *Auk* 89: 192–193.
- Address: Dr. Johan Ingels, Galgenberglaan 9, B-9120 Destelbergen, Belgium.
- © British Ornithologists' Club 1981.

A substitute name for a Philippine minivet (*Pericrocotus*) by Kenneth C. Parkes

Received 14 February 1981

In a recent revision of the subspecies of the Flame Minivet *Pericrocotus flammeus* of the island of Mindanao, Philippines, I described a highly distinctive but long overlooked population as *P. f. neglectus*, new subspecies. The name I selected was unfortunately more appropriate than I realized at the time. I am indebted to Dr. Carlo Violani of the Instituto di Ecologia Animale ed Etologia, Pavia, Italy (temporarily at Rutgers University, U.S.A.) for calling my attention to the fact that the name *neglectus* is preoccupied in *Pericrocotus*. I therefore propose *Pericrocotus flammeus nigroluteus*, new name, for *Pericrocotus flammeus neglectus* Parkes, 1974, *Ann. Carnegie Mus.* 45: 38, **not** *Pericrocotus neglectus* Hume, 1877, *Stray Feathers* 5: 171, 189 (now considered a subspecies of *P. brevirostris*).

The name chosen alludes to the black and yellow rather than black and orange colour of adult males, unique among the Mindanao populations of this species.

Address: Dr. Kenneth C. Parkes, Carnegie Museum of Natural History, Pittsburgh, Pa. 15213, U.S.A.

© British Ornithologists' Club 1981.

The Authorship of the Generic and Specific Names of the Bat Hawk

by R. K. Brooke and P. A. Clancey*

Received 2 February 1981

There are two generic names available for the Bat Hawk:— *Macheiramphus* Bonaparte, 1850, *Rev. Mag. Zool.* ser. 2, vol. 2: 482; and *Machaerhamphus* Westerman, 1851, *Bijdr. Dierk.* 1: 29. For about a century Westerman's name was used, not least because it was believed, erroneously, to have been published in 1848. In 1960 Deignan, *Bull. Brit. Orn. Cl.* 80: 121, pointed out that Bonaparte's name had priority and should be brought into use. Both authors recognized only one species in their genus, a species which they both named *alcinus* when proposing the genera. As may be seen from the Appendix (below), the great majority of workers on African birds have followed the Law of Priority and used Bonaparte's name once they had become aware of Deignan's remarks.

Amadon (1979) in Peters' *Check-list of Birds of the World* (1: 298) restored Westerman's name, arguing that Bonaparte's name is a *nomen oblitum* and should not have been resurrected. This is surely unwarranted. In the first place, the present Code of Zoological Nomenclature does not recognize the term *nomen oblitum*, but in Art. 79, as amended, lays down the procedure to be followed if a previously overlooked senior synonym poses a threat to the stable nomenclature of an animal of major interest to the scientific community. We are not aware that Dr Amadon has taken the prescribed measures, basically an application to the International Commission, for the conservation of Westerman's generic and specific names.

If an application for the conservation of Westerman's names were made now instead of in 1961 or 1962 we would oppose it on the grounds that most workers on African birds who have published books or check-lists in the last 20 years have used Bonaparte's names. It would be a lengthy and not very rewarding exercise to comb the extensive periodical literature to see what the weight of usage has been, but we are confident that it would support the conclusion derived from the survey of books and check-lists enumerated in the Appendix below. As far as we are concerned, stability and priority combine to continue to follow Deignan in adopting Bonaparte's names *Macheiramphus alcinus* for the Bat Hawk.

APPENDIX

Use of *Machaerhamphus* Westerman and *Macheiramphus* Bonaparte in major works on African birds since 1960.

Use of *Machaerhamphus* Westerman

- Amadon, D. 1979. in Amadon, D. & Stresemann, E. *Falconiformes* in Mayr, E. & Cottrell, G. W. (edd.) *Check-list of Birds of the World*, 2nd ed. Vol. 1: 289. Harvard, Mass.: Museum Comparative Zoology.
- Brown, L. 1970. *African Birds of Prey* (p. 304). London: Collins.
- Brown, L. & Amadon, D. 1968. *Eagles, Hawks and Falcons of the World*, Vol. 1: 230. Feltham: Country Life Books.
- Mackworth-Praed, C. W. & Grant, C. H. B. 1962. *Birds of the Southern Third of Africa*, Vol. 1: 150. London: Longmans, Green.
- 1970. *Birds of West Central and Western Africa*, Vol. 1: 125 (where it is attributed to Bonaparte). London: Longman Group.

*This paper constitutes part of the commemoration of the 21st anniversary of the establishment of the Percy FitzPatrick Institute of African Ornithology.

Schouteden, H. 1965. La faune ornithologique des territoires de Dilolo et Kolwezi de la Province du Katanga (p. 16). *Zool. Docum.* 9: 1-96; and where necessary in earlier numbers.

Use of *Macheiramphus* Bonaparte (sometimes misspelt "rh" instead of "r")

Benson, C. W. & Benson, F. M. 1977. *The Birds of Malawi* (p. 57). Limbe: D. W. K. Macpherson (sponsor).

Benson, C. W., Brooke, R. K., Dowsett, R. J. & Irwin, M. P. S. 1971. *The Birds of Zambia* (p. 72). London: Collins.

Britton, P. L. (ed.). 1980. *Birds of East Africa*. Nairobi: East Africa Natural History Society.

Brown, L. H. & Britton, P. L. 1980. *The Breeding Seasons of East African Birds* (p. 42). Nairobi: East Africa Natural History Society.

Clancey, P. A. 1964. *The Birds of Natal and Zululand* (p. 75). Edinburgh: Oliver & Boyd.

— 1965. A catalogue of birds of the South African sub-region (p. 243). *Durban Mus. Novit.* 7: 201-633.

— 1971. A handlist of the birds of southern Moçambique (p. 194). *Mem. Inst. Invest. Cient. Moçambique*. Vol. 10, ser. A: 145-303.

— (ed.) 1980. *S.A.O.S. Checklist of Southern African Birds* (p. 35). Johannesburg: Southern African Ornithological Society.

Cyrus, D. & Robson, N. 1980. *Bird Atlas of Natal* (p. 71). Pietermaritzburg: University Natal Press.

Irwin, M. P. S. 1978. *A Bibliography of the Birds of Rhodesia 1873-1977* (p. 52). Salisbury: Rhodesian Ornithological Society.

McLachlan, G. R. & Liversidge, R. 1970. *Roberts Birds of South Africa*, 3rd ed. (p. 88). Cape Town: Trustees Voelcker Bird Book Fund.

— 1978. *Roberts Birds of South Africa*, 4th ed. (p. 94). Cape Town: Trustees Voelcker Bird Book Fund.

Pakenham, R. H. W. 1979. *The Birds of Zanzibar and Pemba* (p. 65). London: British Ornithologists' Union.

Pinto, A. A. da R. 1970. Um catálogo das aves do Distrito da Huíla (p. 26). *Mem. Trab. Inst. Invest. Cient. Angola* 6: 1-193.

Serle, W. & Morel, G. J. 1977. *A Field Guide to the Birds of West Africa* (p. 52). London: Collins.

Snow, D. W. (ed.) 1978. *An Atlas of Speciation in African Non-Passerine Birds* (p. 105). London: Trustees British Museum (Natural History).

White, C. M. N. 1965. *A Revised Check List of African Non-Passerine Birds* (p. 59). Lusaka: Govt Printer.

Winterbottom, J. M. 1968. A check list of the land and fresh water birds of the western Cape Province (p. 98). *Ann. Sth. Afr. Mus.* 53: 1-276.

— (ed.) 1969. *Check List of the Birds of South Africa* (p. 39). South African Ornithological Society.

— 1971. *A Preliminary Check List of the Birds of South West Africa* (p. 58) (where it is attributed to Westernman). Windhoek: S.W.A. Scientific Society.

Address: R. K. Brooke, FitzPatrick Institute, University of Cape Town, Rondebosch 7700, South Africa.

P. A. Clancey, Durban Museum & Art Gallery, Box 4085, Durban 4000, South Africa.

© British Ornithologists' Club 1981.

Ecological differences between the Grass Owl *Tyto capensis* and the Marsh Owl *Asio capensis*

by C. W. Benson

Received 3 February 1981

Brooke (1965) reported on a collection made by D. W. K. Macpherson in the Furancungo District of northern Mozambique (here interpreted as Mozambique north of the Zambezi River) in 1928-29. He also used further information in Macpherson's field note-book (now in the FitzPatrick Institute,

University of Cape Town, see *Ostrich*, 1974: 208). Despite further contributions by Brooke (1969) and Hanmer (1976), northern Mozambique is still relatively little known ornithologically. As indicated by the former, Macpherson had presented a few of his specimens to the British Museum (Natural History) (BMNH), and I can confirm their presence in Tring (precise number 8). Brooke stated that the remainder of the specimens and clutches of eggs had been lost. In fact, when my wife and I were the guests of Mr and Mrs Macpherson in Malawi in August 1980, he produced a further 50 specimens, which he has most kindly presented to the University Museum of Zoology, Cambridge.

All 50 specimens are correctly identified, dates and localities tallying with those given by Brooke (1965). The most interesting is one of the Grass Owl *Tyto capensis*, from the Bandi River, 18 January 1929. There is a specimen of this species in the BMNH from Beira, collected by Grant, whereas BMNH specimens collected on the Zambezi at Shupanga by Kirk, and at Sena by Alexander are of the Marsh Owl *Asio capensis*. These records have been transposed by Vincent (1934), but are correctly shown by Clancey (1971). Macpherson's specimen of *T. capensis* appears to be the only one from northern Mozambique. The only other one of *A. capensis* from this area may be from southwest of Dedza, Malawi (Benson 1952).

Ecological differences between these 2 species need further investigation. Thus Benson & Benson (1977) record both in the same habitat at Dedza. Masterson (1973) found that in Mashonaland *T. capensis* can tolerate longer grass and drier situations in which to lie up. It would seem, however, that for feeding purposes it is *A. capensis* which is the less tied to moist ground. Thus Irwin (in press) writes of it as "not necessarily on moist ground", whereas *T. capensis* seems less catholic (see also Benson *et al.* 1971, Benson & Benson 1977, Britton 1980). Somewhat contrarily to Masterson, too, D. R. Aspinwall (pers. comm.) finds that *T. capensis* can almost invariably be found in plateau country in Zambia, where there is "knee-high wiry grass/sedge that grows in moist but not inundated places". On the other hand, the habitat of the only *T. capensis* ever observed in Ethiopia (Turner 1974), on 9 May, towards the end of the dry season, would seem more typical of that of *A. capensis* (the record is nevertheless unquestionable). The statement by McLachlan & Liversidge (1978) that *T. capensis* occurs "also in lightly wooded country" is surely nowhere applicable, even allowing for the possibility of some geographical variation in habitat.

Data from Zimbabwe suggest that egg-laying by *T. capensis* may be the more strictly associated with the rains. Irwin (in press) gives 23 records, all for November–May (peak of 9 in March). Of 79 records of *A. capensis*, 74 are for February–May (peak of 59 in March–April), with 2 for June and 1 each for July, August and December. McLachlan & Liversidge (1978) give an incubation period for *T. capensis* of c. 42 days, Earlé (1978) a fledging period of nearly 2 months. From Smith & Killick-Kendrick (1964), it appears that a young of *A. capensis* left the nest after c. 16 days. Data for the Short-eared Owl *A. flammeus* are assumed approximately applicable to its congener. Witherby (1938) gives the incubation period as 24–28 days, the young leaving the nest at 12–17 days, but unable to fly until 24–27 days. It follows that in Zimbabwe young of both species are for the most part being reared at about the same time, mainly in May–June, in the early dry season.

The fewer records from Natal and Zululand (Dean 1971) show *T. capensis* as laying in November–May (discounting 1 anomalous record for July), *A. capensis* in February–June. At Barberspan, western Transvaal, Dean (1978) gives one record each of *T. capensis* for February and April, and 13 of *A. capensis* for March–June. Both layings of the former ended in failure, and even these attempts were only in years of high rainfall.

For Zambia and Malawi, 14 records indicate *T. capensis* as laying in February–June (Benson *et al.* 1971, Benson & Benson 1977, Colebrook-Robjent 1973, Tucker 1980, and Aspinwall, adding unpublished data from himself, Colebrook-Robjent, W. F. Bruce-Miller, R. A. Conant and E. H. Penry). There are no data for *A. capensis* from Malawi, but from Zambia, from the first and the last 2 of the 5 sources above, there are 12 records, for March–June (including 7 for April).

The 2 records of *T. capensis* quoted by Ruth Chapin (1978), wife of J. P. Chapin, for southern Zaire (Shaba) indicate laying in April. Not covered in Brown & Britton (1980), there is a female of *T. capensis* in the BMNH from Njombe, southern Tanzania, collected by R. M. Bell, 3 March 1932, and marked “two eggs”. Yet for further north, 4 records are interpreted by these authors as laying in dry months; while 7 of *A. capensis*, from widespread localities, indicate that it “lays at the end of the rains and rears young in the subsequent dry season”. This latter interpretation agrees rather well with that possible from further south, particularly from the numerous Zimbabwe data. From the Kivu area, Chapin (1978) records nestlings of *T. capensis* in August, Prigogine (1953) in January, March and August. Probably in this area, near the equator, with a wide seasonal distribution of rain (Prigogine 1953: 92), it can breed with success throughout the year. That laying by *A. capensis* is less strictly associated with the rains derives support from Smith & Killick-Kendrick (1964), who record laying in northern Nigeria in the last 3 months of the year, the rains having concluded in October. Also, in Madagascar, where the incidence of the seasons is similar to that at the same latitudes in southern Africa, laying has only been recorded in April, May and July (Rand 1936: 391), in the dry season.

The possibility of competition between the 2 species is alluded to by Brown (1970: 153). In their extensive area of overlap (maps 259, 274 in Snow 1978), it could be aggravated by this lack of any clear-cut difference in their breeding seasons. Yet there may be differences in their prey. At Barberspan, Dean (1978) found that *T. capensis* (mean weight 450 g) takes heavier prey than does *A. capensis* (325 g). Also, *Otomys angoniensis*, a major prey of *T. capensis*, is a vlei rodent, inhabiting moister grasslands than do *Praomys natalensis* and *Rhabdomys pumilio*, major prey of *A. capensis*. At Vaaldam, south central Transvaal, Earlé (1978) records rodents (and termites frequently) as prey of *T. capensis*. In fact 51% of the rodent prey was *R. pumilio*, and *O. angoniensis* is not listed. Nevertheless, Dean's findings support the indications from Zimbabwe and northward that *T. capensis* is more of a moist grassland feeder of the two. At Zimbabwe Ruins, Vernon (1980) found the major prey of *T. capensis* to be rodents, of *A. capensis* insects, again suggesting that in general the former takes larger prey (nevertheless with a wide range, including insects, frogs and a bird as large as the Black Crake *Limnocorax flavirostris*). Incidentally, R. A. Conant and P. B. Taylor (in Aspinwall pers. comm.) both record *A. capensis* as preying on termites on the wing in Zambia.

It may be that in Madagascar, where *T. capensis* is unknown, *A. capensis* has a larger size-range of prey than in Africa. Wing-lengths (from Benson *et al.* 1976) indicate that *A. c. bova* is considerably larger than *A. c. capensis*. Yet in Morocco, where *T. capensis* is also unknown, *A. c. tingitanus* is little if at all larger than *A. c. capensis* (Mackworth-Praed & Grant 1970), although it may be significant that the larger *A. flammeus* is regular as a winterer. Benson *et al.* bring up to date what little is known about the prey of *A. c. bova*, which includes insects, small mammals and a buttonquail *Turnix nigricollis*, but considerably larger items may also be taken.

There is some information on the voice of *A. capensis*, as in Smith & Killick-Kendrick (1964) and McLachlan & Liversidge (1978), but until recently almost nothing on that of *T. capensis* (in Africa). McLachlan & Liversidge merely state "Hissses loudly". Aspinwall (1979) likens the call to that of the Barn Owl *T. alba*, but a little less strident, "a heavily sibilant high-pitched tremolo note lasting one or two seconds". Brooke (1965) quotes no information on voice from Macpherson's notes, but the label of the specimen shows that Macpherson was attracted by a "loud snoring" while the bird was in process of devouring a rat.

Since the above was submitted, Snow & Louette (1981) have rejected sight records of *T. capensis* from central Namibia as due to probable confusion with *A. capensis*. They originate with Hoesch & Niethammer (1940). It seems very unlikely that suitable habitat for *T. capensis* could exist in so arid an area. Although the 2 are very unlike in appearance, sightings only of birds on the wing and/or in poor light make confusion possible. This does not invalidate the general picture already presented, although it might explain the July egg-laying record of *T. capensis* in Dean (1971). Also, there are records from Malawi not covered by Benson & Benson (1977) which are perhaps doubtful. Turner & Mill (in Hunter 1976) give "Regular sightings" of *A. capensis* on the Nyika Plateau. Yet R. J. Dowsett (pers. comm., 30 May 1981), who is better acquainted with this area than any other ornithologist, past or present, writes that he and his wife Dr F. Dowsett-Lemaire have so far only seen *T. capensis* there. Also, Stead & Schulten (1979: 269, 443) believe *T. capensis* to be fairly common, *A. capensis* only rare, at Lake Chilwa. They refer to c. 25 of the former seen from a helicopter—a record questioned by Benson & Benson (1977). In contrast to the Nyika, maybe there is more suitable habitat for *A. capensis* than there is for *T. capensis* around Lake Chilwa.

Gore (1980) refers to *A. capensis* as an apparent visitor to The Gambia, and Louette (1981) alludes to a possible movement from the Jos Plateau, Nigeria to Lake Chad. There could well be movements, due to seasonal flooding of grassland. *T. capensis*, more dependent on permanently moist habitat, may be more strictly sedentary.

Acknowledgements: I am particularly grateful to D. R. Aspinwall and M. P. Stuart Irwin for their assistance

References:

- Aspinwall, D. R. 1979. Bird notes from Zambezi District, North-Western Province. *Occ. Pap. 2, Zambian Orn. Soc.*
 Benson, C. W. 1952. Notes from Nyasaland. *Ostrich* 23: 144-159.
 Benson, C. W. & Benson, F. M. 1977. *The Birds of Malawi*. Limbe: D. W. K. Macpherson (sponsor).
 Benson, C.W., Brooke, R. K., Dowsett, R. J. & Irwin, M. P. S. 1971. *The Birds of Zambia*. London: Collins.

- Benson, C. W., Colebrook-Robjent, J. F. R. & Williams, A. 1976. Contribution à l'ornithologie de Madagascar (second part). *L'Oiseau & R.F.O.* 46: 209-242.
- Britton, P. L. (ed.). 1980. *Birds of East Africa*. Nairobi: East Africa Natural History Society.
- Brooke, R. K. 1965. Ornithological notes on the Furancungo District of Mozambique. *Arnoldia (Rhod.)* 2(10).
- 1969. The Müller collection of birds from northern Portuguese East Africa. *Bull. Brit. Orn. Cl.* 89: 145-151.
- Brown, L. 1970. *African Birds of Prey*. London: Collins.
- Brown, L. H. & Britton, P. L. 1980. *The Breeding Seasons of East African Birds*. Nairobi: East Africa Natural History Society.
- Chapin, R. T. 1978. Brief accounts of some Central African birds, based on the journals of James Chapin. *Rev. Zool. Afr.* 92: 805-836.
- Clancey, P. A. 1971. *A Handlist of the Birds of Southern Moçambique*. Lourenço Marques: Inst. Invest. Cient. Moç.
- Colebrook-Robjent, J. F. R. 1973. Some breeding records of birds in Zambia. *Zambia Mus. J.* 4: 7-18.
- Dean, W. R. J. 1971. Breeding data for the birds of Natal and Zululand. *Durban Mus. Novit.* 9: 59-91.
- 1978. The ecology of owls at Barberspan, Transvaal. *Proc. Symp. Afr. Predatory Birds* (Pretoria: Northern Transvaal Orn. Soc.).
- Earlé, R. A. 1978. Observations at a nest of the Grass Owl. *Ostrich* 49: 90-91.
- Gore, M. E. J. 1980. *Birds of The Gambia*. London: B.O.U. Check-list No. 3.
- Hanmer, D. B. 1976. Birds of the Lower Zambezi. *Sth. Birds* 2: pp. 66. Witwatersrand Bird Club.
- Hoesch, W. & Niethammer, G. 1940. Die Vogelwelt Deutsch-Südwestafrikas. *J. Orn. Lpz.* 88, suppl.: pp. 404.
- Hunter, N. D. (ed.). 1976. Nyala records. *Nyala* 2(1): 68-69.
- Irwin, M. P. S. In press. *The Birds of Zimbabwe*. Salisbury: College Press.
- Louette, M. 1981. *The Birds of Cameroon. An annotated check-list*. Brussel: Paleis der Academiën.
- Mackworth-Praed, C. W. & Grant, C. H. B. 1970. *Birds of West Central and Western Africa*. Vol. 1. London: Longmans.
- McLachlan, G. R. & Liversidge, R. 1978. *Roberts Birds of South Africa*. Cape Town: John Voelcker Bird Book Fund.
- Masterson, A. 1973. Marsh Owls and Grass Owls. *Honeyguide* 73: 17-19.
- Progonine, A. 1953. Contribution à l'étude de la faune ornithologique de la région à l'ouest du lac Edouard. *Ann. Mus. R. Soc. Congo Belge* 8(24): 1-117.
- Rand, A. L. 1936. The distribution and habits of Madagascar birds. *Bull. Am. Mus. Nat. Hist.* 72: 143-499.
- Smith, V. W. & Killick-Kendrick, R. 1964. Notes on the breeding of the Marsh Owl *Asio capensis* in northern Nigeria. *Ibis* 106: 119-123.
- Snow, D. W. (ed.). 1978. *An Atlas of Speciation in African Non-passerine Birds*. London: British Museum (Nat. Hist.).
- Snow, D. W. & Louette, M. 1981. Atlas of Speciation in African Non-passerine Birds—*Addenda and Corrigenda* 2. *Bull. Brit. Orn. Cl.* 101: 336-339.
- Stead, D. E. & Schulten, G. G. M. 1979. The Birds of the Chilwa area. *Monogr. Biol.* 35: 264-273, 441-443.
- Tucker, J. J. 1980. Birds at Kabulonga Dam, Lusaka 1970-1973. *Bull. Zambian Orn. Soc.* 12(1): 13-31.
- Turner, D. A. 1974. Cape Grass Owl in Ethiopia. *Bull. Brit. Orn. Cl.* 94: 38-39.
- Vernon, C. J. 1980. Prey of six species of owl at the Zimbabwe Ruins—1970 to 1975. *Honeyguide* 101: 26-27.
- Vincent, J. 1934. The birds of northern Portuguese East Africa (part V). *Ibis* 13(4): 757-799.
- Witherby, H. F. (ed.). 1938. *The Handbook of British Birds*. Vol. 2. London: Witherby.
- Address: C. W. Benson, Dept. of Zoology, Downing Street, Cambridge CB2 3EJ, England.

On the Type-locality of *Pogonocichla intensa* Sharpe, 1901

by G. R. Cunningham-van Someren

Received 18 February 1981

While working on a collection of Turdinae from Kenya, I was sent, through the kindness of I. C. J. Galbraith of the British Museum (Natural History), a specimen of *Merula johnstoni* (= *Turdus abyssinicus*) collected by W. G. Doggett, and through the additional kindness of C. W. Benson, the holotype of the White-starred Forest Robin *Pogonocichla intensa*. Both specimens were from Sir Harry Johnston's collection and carry data written in Doggett's hand, both being dated 22 April 1900 and the locality as "Entebbe". The thrush has field number 106 and the forest robin number 100. The British Museum has added to each a printed label with the inscription "N'tebi, Uganda, Equatorial Africa. Presented by Sir Harry Johnston, K.C.B."

Sir Frederick Jackson (1938: 1007), in considering *Pogonocichla intensa*, said it was labelled as collected at "N'tebbi", adding "but was probably collected elsewhere, as Doggett was careless in the matter of labelling his specimens and given to jotting down localities and dates in a haphazard manner". Furthermore Jackson continues "The bird is probably an example of *P. s. keniensis* which has been stained by damp or immersion in some liquid". This staining was confirmed by Grant & Mackworth-Praed (1941: 38), who wrote "it must have been treated in some way that has darkened its general colour" citing the dry cracked appearance of its bill as "commensurate with its having been immersed in some liquid". Capt. C. R. S. Pitman had assured them it could not have been collected at Entebbe since it was a high altitude forest species. Further they agreed the specimen was "in general characters" similar to *P. stellata* from Kenya, especially Mau specimens; and "as Mau was one of the places visited by Doggett, we propose to fix this place as the type-locality of *Pogonocichla intensa* Sharpe. *P. intensa* thus becomes a synonym of *P. stellata guttifer*".

Mr. C. W. Benson has, at my request, kindly checked the Register in the BMNH and found that there was a second thrush and a specimen of *Drepanorhynchus* (= *Nectarinia*) *reichenowi* also collected by Doggett at "Entebbe", the former on 22 April and the latter on 7 April 1900. Doggett is known to have collected also around Lake Naivasha (Naiposha in the Masai tongue); Sir Harry Johnston (1902) wrote that "Doggett collected a special endemic fish" there, namely *Haplochilichthys antinorii*. Confusion as to the whereabouts of the locality "Entebbe" stems also from the fact that the specimens were labelled as from Uganda. It should, however, be borne in mind that in 1900, when they were collected, the Uganda Protectorate extended east to the region around Lake Naivasha. The species labelled "Entebbe" are in fact not known to occur at Entebbe, Uganda.

If Doggett had collected on the northwest side of Lake Naivasha, now in the Republic of Kenya, then he might well have done so in the forest areas near the lake at "N'dabibi", and so it is possible that when he asked a tribesman he mistook the name of the locality and "jotted" down "Entebbe". N'dabibi, in English means "the place of the clover" (*Trifolium*), which is fitting, as clover is widespread in the highlands above the lake, around what are to-day known as the N'dabibi and Eburru (Epuru) Forests. It is to be

admitted, however, that the altitudes given on Doggett's labels bear little relation to the actual altitude of the zone, from the lake at 6180 ft to the forest areas of N'dabibi rising to 7000-8000 ft. Doggett puts the forest robin at 2700, the thrust at 3800 and the sunbird at 3000 ft—probably merely estimates as opposed to measurements.

White (1962: 139), who placed *intensa* as a subspecies of *P. stellata*, agreed with Grant & Mackworth-Praed (*op. cit.*) that the type-locality was probably Mau, and indeed the N'dabibi-Eburru area is really the southern end section of the Mau Range, which forms part of the west wall of the Rift Valley. All 3 species inhabit these forests and even the lake shore gardens, which themselves are above 6000 ft.

However an unsatisfactory situation arises in that the holotype of *intensa* is evidently a stained specimen and does not resemble specimens from the Mau area: the yellow of the ventral surface of the holotype has a rufous or brownish stain more comparable to the rich colour of *P. s. ruwenzorii*, the darkest form of *P. stellata*, while birds from the Mau are certainly not *P. s. guttifer* of Kilimanjaro, as suggested by Grant & Mackworth-Praed (*op. cit.*).

The only thorough survey in the last 30 years of geographical variation in *Pogonocichla* is by Moreau (1951). He ignored *intensa*, making no reference to Grant & Mackworth-Praed (*op. cit.*) and designated birds in the geographical area which includes Mau as *P. stellata keniensis*; but *intensa* antedates *keniensis* and should replace *keniensis* as the subspecies of *P. stellata* in that area. Under the provisions of the International Code of Zoological Nomenclature, (1964), it does not in fact appear that the status of the holotype of *intensa* is vitiated in any way by its stained state*. I would, therefore, on the evidence given, designate the type-locality of *Pogonocichla stellata intensa* as N'dabibi, at the south end of the Mau Range, west of the Rift Valley with co-ordinates 0°44'S, 36°16'E, northwest of Lake Naivasha, Kenya, at an altitude of 6180-8000 ft.

Acknowledgements: I wish to thank Mr. C. W. Benson for much assistance, for bringing out the holotype to Malawi for me, for checking the BMNH Register and commenting on, with suggestions for improvement, a first draft of this note. My thanks also to Mr. I. C. J. Galbraith for the loan of the specimens from the British Museum (Nat. Hist.), and finally I tender my thanks to Dr. J. F. Monk for much editorial help with the final typescript.

References:

- Grant, C. H. B. & Mackworth-Praed, C. W. 1941. *Bull. Brit. Orn. Cl.* 61: 38.
 Jackson, Sir F. 1938. *The Birds of Kenya Colony and the Uganda Protectorate*. Gurney & Jackson: London.
 Johnston, Sir H. 1902. *The Uganda Protectorate*. Vol. 2: 10. Hutchinson: London.
 Moreau, R. E. 1951. Geographical variation and plumage sequences in *Pogonocichla*. *Ibis* 93: 383-401.
 White, C. M. N. 1962. *A Revised Check List of the African Shrikes . . . Babblers*. Dept. of Game & Fisheries: Lusaka.

Address: G. R. Cunningham-van Someren, Section of Ornithology, Division of Natural Sciences, National Museums of Kenya, P.O. Box 40658, Nairobi, Kenya.

© British Ornithologists' Club 1981.

**P. s. intensa* is the name used by Britton, P. L. (Ed.), 1980. *Birds of East Africa* (p. 143), Nairobi: EANHS.

Field description of the Obbia Lark *Calandrella obbiensis*, its breeding and distribution

by J. S. Ash

Received 21 February 1981

The Obbia Lark *Calandrella obbiensis* was described by Witherby (1905: 514) from a single specimen collected at Obbia (05°21'N, 48°32'E), on the east coast of northern Somalia, on 12 January 1903. White (1961) mentions that it is also known from Mogadishu (02°03'N, 45°21'E), but I have been unable to trace the original reference (possibly White received the information *in litt.* from Moltoni, since many of the Italian specimens and data were destroyed during the war). It was next recorded when a male and female were collected on 15 and 16 September 1962 at Uarsciek (02°18'N, 45°47'E) (Roche 1966). Mackworth-Praed & Grant (1960: 44) give a brief and poor description of the bird, and state that there is no information for habits, nest and eggs, breeding or calls; curiously, they include a distribution map based apparently on the one known specimen indicating a rather extensive range in coastal and inland northeastern Somalia (as in the case of White above, they may have received further unpublished information from Moltoni). Neither the description of the bird nor the coloured plate aid in its identification, but an adequate description is given in Witherby (*op. cit.*). Some of the missing information is now available and is presented here.

When I arrived in Somalia in August 1978, I was at once puzzled over the identification of a small lark, unquestionably the most numerous passerine present on the coastal dunes round Mogadishu. The only literature available was Mackworth-Praed & Grant (*op. cit.*), and this proved to be unhelpful, although the possibility of these birds being Obbia Larks was not dismissed. I circulated a description among friends who might be able to help, which resulted in P. R. Colston at the British Museum commenting that my description, after it had been compared with the type specimen of *C. obbiensis*, "was better than that in Mackworth-Praed & Grant". The type, incidentally, is in poor condition.

Distribution

During 1978–1980 I travelled widely in Somalia and examined many stretches of the coastline. Obbia Larks are confined to a very narrow coastal strip in the southern part of their range (Fig. 1), from 30 km south of Mogadishu at Hal Hambo (01°54'N, 45°05'E), to 03°17'N, 46°50'E at 74 km north of Adale (02°45'N, 46°19'E). At this point on a journey with J. E. Miskell we were obliged to turn back because of soft sand and follow an inland route. No more Obbia Larks were seen for 2 days until we were 4 km east of Harardere (04°38'N, 47°52'E), where we saw several at 16 km inland. From here onwards as we approached the coast again they became very common all the way to Obbia; beyond Obbia we turned inland and saw no more of them. Almost certainly their distribution is continuous along the 170 km of coast we missed. From my interpretation of the maps the habitat would seem to be unsuitable to the north of Obbia, and we saw no trace of the species at other points on the coast visited in the next few days, including Eil (07°59'N, 49°48'E), Hafun Bay (10°25'N, 51°10'E) and Tohen (11°44'N, 51°15'E).

Elsewhere in the country no Obbia Larks were seen in coastal areas from

Zeila ($11^{\circ}21'N$, $43^{\circ}28'E$) to Berbera ($10^{\circ}26'N$, $45^{\circ}02'E$), around Mait ($10^{\circ}58'N$, $47^{\circ}04'E$), from Alula ($11^{\circ}58'N$, $50^{\circ}15'E$) to Tohen, in the north; nor round Merca ($01^{\circ}43'N$, $44^{\circ}46'E$), Brava ($01^{\circ}06'N$, $44^{\circ}03'E$) and much of the coast from Kismayu ($00^{\circ}22'S$, $42^{\circ}32'E$) to Kiamboni ($01^{\circ}40'S$, $41^{\circ}36'E$).

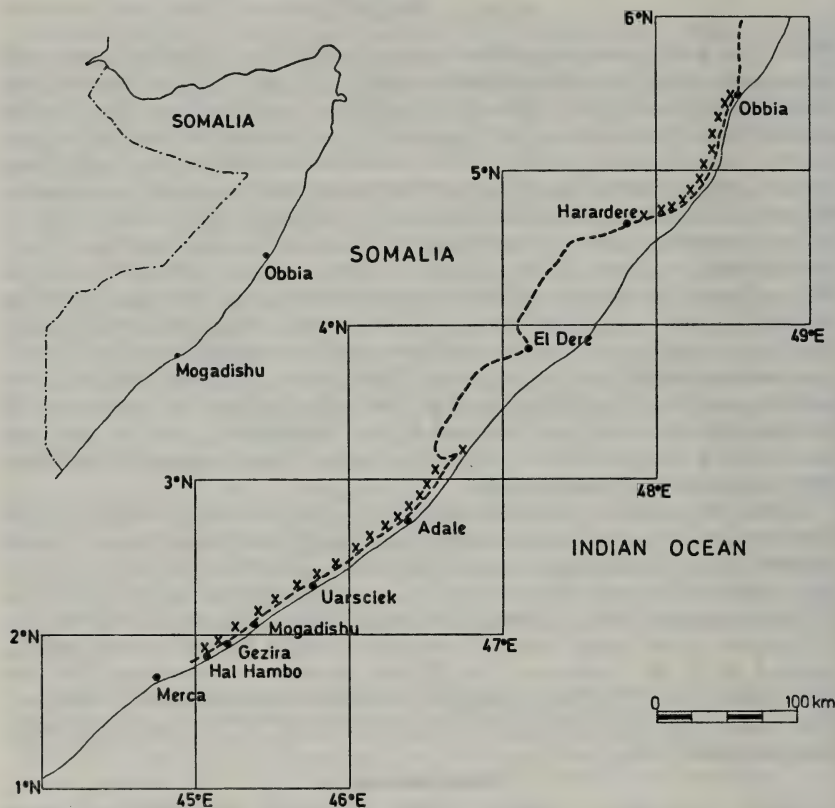


Fig. 1. Distribution of the Obbia Lark *Calandrella obbiensis* in Somalia. The crosses indicate areas where the species has been recorded; the broken line indicates the route followed on a journey in 1980. Map drawn by Alain Peeters.

The distribution of the Obbia Lark thus can be described as occupying a narrow coastal belt 570 km long from Obbia in the north to just south of Mogadishu; in the north it extends up to 16 km inland, but in the south not much more than 1 km. The total area inhabited by the species cannot be more than 1500 km², and is probably nearer to 1200 km². However, mostly it is abundant where it occurs and there is no reason to believe that it is endangered in any way.

Field Description

A small short-tailed lark, c. 12 cm long, whole of upperparts brown, streaked with darker shades of brown; a pale patch just above bill (not present in all birds); a distinct whitish supercilium extending in front of and behind

eye, but not always reaching the bill, sometimes divided vertically to form two equal halves; dark line through eye; a double moustachial streak on each side; throat white; rest of underparts whitish heavily streaked in almost regular lines to lower breast and on flanks; tail with central feathers as mantle, contrasting with the remainder which are uniformly dark brown, sometimes showing a trace of white along the outer feather; bill fairly stout, dark above and yellowish below; legs pink.

Breeding

Six nests were found in 1979 and evidence obtained for breeding in several other pairs observed. The eggs collected are being deposited in the Smithsonian Institution.

- a. 14 km north of Uarsciek, 8 June, building; 2 eggs on 15 June were collected.
- b. 41 km north of Uarsciek, 8 June, nest with 1 addled egg and one almost fully fledged pullus, which left the nest on being investigated.
- c. 17 km north of Uarsciek, 15 June, 2 eggs.
- d. 15 km north of Mogadishu, 17 June, 2 erythristic eggs; on 21 June it had been trampled by goats.
- e. Gezira (01°57'N, 45°11'E), 11 July, 1 addled egg and a newly hatched pullus; the chick was there on 16 July, but the nest was empty on 21 July.
- f. Gezira, 12 July, 3 pulli ready to leave the nest.

In addition, a near fully-fledged pullus together with 2 *Anthus melindae* pulli were found in a regurgitated bolus from an unidentified predator, possibly a jackal, on 8 June, and adults of 3 pairs were seen collecting food on 28 and 29 June and 14 July. Clutch size was probably 2 in 5 nests, although two of these may not have been complete, and 3 in another, with eggs laid in May and June and possibly July. Further breeding might occur in November–December in some years of good rain, and there is some support for this from the 5 males collected December–February showing testicular development (Table 1).

TABLE 1

Mensural data on 6 Obbia Larks *Calandrella obbiensis*

Collection No.	Sex	Locality	Date	Wing	Weight	Gonads
178	♂	Gezira	14.xii.78	67	15.3	4
186	o	Mallable	14.xii.78	71	14.7	—
298†	♂	Gezira	8.i.79	70	15.2	1.5
299†	♂	Gezira	8.i.79	70	15.6	1.5
348*	♀	Mallable	16.ii.79	66	12.3	< 1
349	♂	Mallable	16.ii.79	70	14.0	3
350	♂	Mallable	16.ii.79	70	13.7	3

Notes. † = Tarsi dull flesh, * = Tarsi pale brown and Iris brown.

Wing-length in mm, weight in g, largest diameter of testis or ova in mm.

o = unsexed.

Nest sites. The sites of nests a–c were similar—on the southeast side of a thin plant (offering very little shade) on dunes with sparse vegetation, 2 at 40 m and one at 150 m inland above high tide line. In a the plant was a *Lithospermum* sp, in b a species of grass and in c a low rush *Juncus* sp. In d the nest was built in a scrape below a thin cover of *Zygophyllum simplex*, making it almost invisible from above, within 20 m of the spray zone above a low sea cliff. Nest e was completely exposed, with a very light growth of a legume

to the south and west (possibly grazed off) and offering no shade; it was on dunes 50 m from the high tide line. Nest *f* was in very sparse cover of a grass *Dactyloctenium aegyptiacum*, a sedge *Cyperus* sp. and a legume *Indigophora* sp., but the nest was completely covered with strands of the creeping *Indigophora*; it was on dunes 500 m from the high tide line.

Nests. Nest *a* was built into a deep cup-shaped depression in the sand, a rather substantial nest of thin dry rootlets, pieces of withered vegetation, some woolly *Aerva* seeds and dead marine *Cymodocea* leaves, and 19 pieces of thick white string varying from 6.5 to 17.5 cm in length, to the extraordinary total of 195.5 cm. Internal diameter 50 mm, external diameter 90 mm, internal depth of cup 50 mm, so that the eggs were actually below ground level. Nest *b* was a shallow saucer-shaped depression, very sparsely lined with a few strands of dry grass. Nest *c* was a slightly wider and flatter cup-shaped nest than *a*, similarly placed in an excavated depression in the sand, entirely made of dry rootlets and a few dead *Cymodocea* leaves. Internal diameter 55 mm, external diameter 85 mm, internal depth of cup 30 mm. Nest *d* had an internal diameter of 60 mm, external diameter 85 mm and internal depth 40 mm. Nest *e* had an internal diameter of 50 mm, external diameter 80 mm and internal depth 35 mm. Thus the 4 measured nests had internal diameters of 50–60 mm, external diameters of 80–90 mm and internal cup depths of 30–50 mm.

Eggs. In nest *a*, one egg was a uniform oval without a broader end, 19.2 x 13.0 mm, creamy white freckled with brown and grey, more so for one third of one end, where 10% of the ground colour was visible; the second was much more sparsely freckled and blunt pyriform in shape, 18.6 x 13.2 mm. In nest *b*, the egg was similar in shape to the first described from *a*, but entirely different in colour, having a greyish-white ground, finely and uniformly speckled all over with grey and brown and having a few larger freckles at one end, and a few faint grey hairlines, 18.1 x 13.8 mm. In nest *c*, one egg was similar in shape to the first from nest *a*, but had an off-white ground colour closely and uniformly speckled with brown, 17.9 x 13.9 mm; the second was slightly rounder, with only half as many dark markings composing larger freckles, many of which were concentrated in a ring one third of the egg's length from one end, 18.0 x 14.0 mm. In nest *d*, the eggs were erythristic, but were destroyed before they could be measured or described in detail. In nest *e*, the added egg measured 17.5 x 13.1 mm, and had a creamy ground colour, speckled all over with light brown, with a few larger freckles, and a denser band at the slightly broader end. The 6 eggs from 4 nests are thus variable in colour and size, averaging 18.2 x 13.5 mm.

Behaviour and Habitat

The Obbia Lark is very common in pairs and small parties in its preferred habitat throughout the year. Restless and very active, seldom staying to feed in one place before flying off, often high in the air for 100 m or more to another similar site. Parties of sometimes up to 30 birds are frequent, even in the breeding season, but just what is the status of these birds is not known. When feeding they often adopt a rather hunched attitude and then look remarkably finch- or *Serinus*-like. They also run about actively and clamber nimbly over low vegetation, rather than through or under it. Some birds are easily approachable, but others are "wild" and fly away at even distant

approach. In the strong monsoon winds, they are difficult to observe in open terrain, where there is low-level driven sand and bright sunlight.

The habitat is sand dunes close to the sea, and rolling plains, with patches of low, usually heavily grazed, halophytic scrub and herbaceous growth.

The following ground-nesting species breed in the same area where Obbia Larks have been observed, but not all occur throughout its range:- Crowned Lapwing *Vanellus coronatus*, Kittlitz's Sand Plover *Charadrius pecuarius*, Cream-coloured Courser *Cursorius cursor*, Little Tern *Sterna albifrons*, Red-winged Bush Lark *Mirafra hypermetra*, Somali Long-billed Lark *M. somalica*, Lesser Hoopoe Lark *Alaemon hamertoni*, Short-crested Lark *Galerida theklae*, White-fronted Sparrowlark *Eremopterix nigriceps* and Malindi Pipit *Anthus melindae*. No contact has been observed between Obbia Larks and any of these species.

Acknowledgements: I wish to thank Dr. R. L. Bruggers and Ali A. Murshid, with whom the first 2 nests were found, Peter Colston for his comments on my field notes, my wife for the identification of plants, Dr. J. F. Monk for valuable comments, and Alain Peeters for drawing the map.

References:

- Mackworth-Praed, C. W. & Grant, C. H. B. 1960. *African Handbook of Birds*. Series 1, vol 2. *Birds of Eastern and North Eastern Africa*. 2nd Ed. Longmans Green & Co: London.
- Roche, J. 1966. Recherches écologiques et systématiques sur les oiseaux de la République de Somalie (partie ex-italienne). *Monitore Zool. Ital.* (Suppl.) 74: 44-79.
- White, C. M. N. 1961. *A Revised Check List of African Broadbills...Pipits*. Government Printer: Lusaka.
- Witherby, H. F. 1905. On a collection of birds from Somaliland. *Ibis* 1905: 509-524.
- Address: Dr. J. S. Ash, Division of Birds, National Museum of Natural History, Smithsonian Institution, Washington, D.C. 20560, U.S.A.

© British Ornithologists' Club 1981.

The first evidence of Demoiselle Crane *Anthropoides virgo* and Pygmy Cormorant *Phalacrocorax pygmaeus* in Britain.

by Graham S. Cowles

Received 4 March 1981

Climatic and environmental change both influence the geographical distribution of avifaunas. Recently, the Demoiselle Crane *Anthropoides virgo* and Pygmy Cormorant *Phalacrocorax pygmaeus*, 2 steppe species not previously known from the British Isles, have been identified from bones excavated at 2 quite unrelated sites, one Pleistocene and one late Middle Age. The discovered remains may be representative of either resident or migrant populations now lost to Britain due to changes in climate or habitat. Alternatively, but much less probably, this may only be fortuitous evidence of 2 individual stragglers which once visited England.

ANTHROPOIDES VIRGO *Demoiselle Crane*

While undertaking the re-examination of avian bones in the A. L. Armstrong (1924-35) collection, excavated from Pin Hole Cave, Creswell Crags, Derbyshire, Mr. R. D. S. Jenkinson requested that a premaxilla be identified for him at the British Museum (Nat. Hist.), Tring. After comparison with material in the osteological collection, I have no doubt that this tip of the

maxilla belongs to *Anthropoides virgo*. Until now only the larger Common Crane *Grus grus*, and the still larger, extinct crane *G. primigenia* have been identified from Pleistocene and archaeological sites in Britain (Harrison & Cowles 1977). Mr. Jenkinson has informed me that, although investigations into the stratification of Pin Hole Cave are not yet concluded, the premaxilla can be definitely dated as Pleistocene, and is possibly from the Middle Last Glacial, about 30,000 years B.C.

Today the Demoiselle Crane breeds in southern Russia and scattered localities across central Asia to Mongolia and southern Siberia (Walkinshaw 1973), wintering in parts of northeastern [and north central] Africa, India, Pakistan, Burma and China (Peters 1934). It is now extinct in Rumania, Tunisia and probably Algeria, but has recently been recorded breeding in Turkey (Cramp & Simmons 1980). This small crane prefers the boreal, steppe and semi-desert climatic zones (Voous 1960), but is said to have occurred twice in Britain, though both records have subsequently been discredited (Witherby *et al.* 1943). Its occurrence in glacial Britain would perhaps coincide with the emergence of suitable steppe vegetation during a temporary retreat in the ice sheet which covered parts of the country during the Pleistocene epoch. Other fossil bone material of *A. virgo* is known from Pleistocene deposits in France and Russia (Brodkorb 1967).

A complete list of the avifauna from Pin Hole Cave will be published by Bramwell & Jenkinson in due course, and I am grateful for their permission to publish in advance this note for ornithologists. The premaxilla of *A. virgo* is deposited in the collection of the Creswell Crags Visitor Centre, Derbyshire, specimen number PH(F) 30,395.

PHALACROCORAX PYGMAEUS *Pygmy Cormorant*

During the examination of bones excavated from an archaeological site in Stert Street, Abingdon, Oxfordshire, Mr. R. Wilson discovered 2 unusual avian carpometacarpi. Measurements indicate that the carpometacarpi are a pair, and form part of the left and right wings of one individual bird. The bones were recovered from debris which filled a disused, late mediaeval timber-lined well shaft (reference F34), dated 15th to 16th century (Parrington 1979). Because the bones did not match those of any species previously recorded from other British archaeological sites, one bone was submitted to the BMNH, Tring for identification. After an extensive study of the anatomical collections, the carpometacarpus was unexpectedly found to fit that of the Pygmy Cormorant *Phalacrocorax pygmaeus*. This species is not represented in the skeleton collection and to enable a direct comparison to be made, a corresponding bone was dissected out from an alcohol preserved specimen. The bone is so unusual in anatomical character and size, that there is absolutely no doubt that it does belong to *P. pygmaeus*, and this is the first record of this species occurring in the British Isles.

The breeding range of *P. pygmaeus* is at present recorded as Albania, Macedonia, Rumania, Bulgaria, Greece, the Black, Caspian and Aral Seas, and Asia Minor east to Iran. Formerly it bred in Hungary and Algeria (Peters 1979). The species is both sedentary and migratory, but movement is generally believed to be over short distances only. It has occurred accidentally in France, southern Sweden, Germany, Poland and some countries south to northern Tunisia (Cramp & Simmons 1977).

The Pygmy Cormorant prefers the temperate mediterranean and steppe

climatic zones (Voous 1960), so it is just possible that the remains of the bird found at Abingdon represents an accidental visitor to 15th-16th century England. Alternatively there may have been a small population of Pygmy Cormorants existing at Abingdon in mediaeval times. The climate in Europe had reached the warmest period for several thousand years during 1100-1310 (Lamb 1977), and the temperate weather with mild winters then would have favoured the establishment of the Pygmy Cormorant in England. The abbey vineyard at Abingdon is recorded as flourishing at about 1380, and is proof of the continuing equitable climate at that time. A climatic change to much colder weather took place in late mediaeval England, with severe winters in the 1430s and in the mid 16th century (Lamb 1977), which would adversely effect a resident population of *P. pygmaeus*. The change had already caused the decline of the English vineyards, and the one at Abingdon was abandoned in 1412.

This small cormorant is predominantly an inland species, requiring dense reedbeds growing beside fresh water rivers, lakes or marshes, food being obtained from the slow flowing or shallow parts of rivers and streams, or in marshes and flood plains (Cramp & Simmons 1977). The 'wetlands' in the vicinity of mediaeval Abingdon and the countryside to the south are served by the rivers Thames and Ock. Proof of the old marshlands can still be seen in the long, mediaeval, raised stone causeway which was constructed at the beginning of the 15th century to give access across the flooded and marshy ground between Abingdon and Culham Bridge, to the south.

The draining of many suitable marshy habitats in various countries, even over the last century, has been responsible for a noticeable reduction in the distribution of *P. pygmaeus*. Cramp & Simmons (1977) record that the bird has not bred in Hungary for the last one hundred years, and that many old nesting colonies are now abandoned in Yugoslavia and in other parts of the range. The species is now extinct in Algeria, although it was present there in the 19th century (Heim de Balsac & Mayaud 1962).

The bones found at Abingdon establish that at least one Pygmy Cormorant was present in Britain 400 years or so ago. It was killed almost certainly for eating, as were other wild birds, its remains being thrown down the disused well, together with other remains from the table, as listed by various specialists (*in* Parrington 1979). It was a common practice to dispose of household refuse in this way at the time. The edibility of many bird species has been studied by Cott & Benson (1971). They rated the palatability of cormorants, and in particular *P. carbo*, highly, describing the flesh as brown and tender, reminiscent of liver. This fact may not have helped the survival of the Abingdon Cormorant.

The climatic factor and man's predation, coupled with the draining of the land, with the resulting loss of natural habitat, would certainly have threatened the survival of the Pygmy Cormorant population. Whether the Abingdon bird was a single accidental visitor, or one of a declining and now extinct population it is impossible to prove from this one record. Archaeological excavations are still in progress in the area and these may provide further evidence. The 2 carpometacarpi of *P. pygmaeus* are at present in the possession of the Oxfordshire Archaeological Unit, Hythe Bridge Street, Oxford.

Acknowledgements: I am extremely grateful to Dr. Don Bramwell, Rogan D. S. Jenkinson and Bob Wilson for their kind cooperation. My thanks goes to Dr. Bramwell for suggesting that the Abingdon 'bone of contention' might be that of *P. pygmaeus*.

References:

- Brodkorb, P. 1967. Catalogue of fossil birds. *Bull. Fla. St. Mus. Biol. Sci.* 11: 152.
- Cott, H. B. & Benson, C. W. 1971. The palatability of birds, mainly based upon observations of a tasting panel in Zambia. *Ostrich Suppl.* 8: 357-384.
- Cramp, S. & Simmons, K. E. L. (eds.) 1977. *Handbook of the Birds of Europe, the Middle East and North Africa*. Vol. 1: 216-219. Oxford University Press: Oxford.
- Cramp, S. & Simmons, K. E. L. (eds.) 1980. *Handbook of the Birds of Europe, the Middle East and North Africa*. Vol. 2: 631-636. Oxford University Press: Oxford.
- Harrison, C. J. O. & Cowles, G. S. 1977. The extinct large cranes of the north-west Palaearctic. *J. Archaeol. Sci.* 4: 25-27.
- Heim de Balsac, H. & Mayaud, N. 1962. *Les Oiseaux du Nord-Ouest de l'Afrique*. P. Lechavalier: Paris.
- Lamb, H. H. 1977. *Climate, Present, Past and Future*. Methuen & Co.: London.
- Parrington, M. 1979. Excavations at Stert Street, Abingdon, Oxon. *Oxoniensia* 44: 1-25.
- Peters, J. L. 1934. *Check-list of Birds of the World*. 2: 153. Harvard University Press: Cambridge, Mass.
- 1979. *Check-list of Birds of the World*. 1 (revised): 178. Museum of Comparative Zoology: Cambridge, Mass.
- Voous, K. H. 1960. *Atlas of European Birds*. Nelson: London.
- Walkinshaw, L. H. 1973. *Cranes of the World*. Winchester Press: New York.
- Witherby, H. F., Jourdain, F. C. R., Ticehurst, N. F. & Tucker, B. W. 1943 (revised). *Handbook of British Birds*. 4: 455. Witherby: London.

Address: G. S. Cowles, British Museum (Natural History), Tring, Herts, England.

© British Ornithologists' Club 1981.

A Note on the birds of the Maldive Islands

by R. S. R. Fitter

Received 17 March 1981

The literature on the birds of the Maldive Islands (Indian Ocean, between c. 8°N and c. 1°S) is so sparse (Duncan 1973, Gadow & Gardiner 1903, Phillips & Sim 1958, Strickland & Jenner 1978, Watson *et al.* 1963) that the results of even so short a stay as one week on a single island may be worth recording. My wife and I visited Villingili, an island of some 200 acres, at the south end of the North Male atoll, very largely devoted to tourism, from 6-13 February 1981. The vegetation consists almost entirely of coconut palms, with associated scrub and pan-tropical weeds, and a fringe of mangroves on the open shore. Approximately half the island's coastline is unspoiled sandy beach or coral rock, the rest being occupied by a tourist facility. A coral reef surrounds the whole island.

In general we were struck by the extraordinary lack of sea and shore birds, both on and off shore. Passerines were also virtually absent. Had there been any freshwater marsh or brackish lagoon, the list of waders would doubtless have been much longer.

Mammals present were Rabbits *Oryctolagus cuniculus*, presumably escaped domesticated forms as some were black, and one small unidentified rodent. Three species of reptile were frequent: the agamid lizard *Calotes versicolor*, the smaller skink *Riopa albopunctata* and indoors the gecko *Hemidactylus frenatus*. Two species of butterfly, a few small moths, a dragonfly, a large black bee with a yellow patch and sundry mosquitoes, muscids and other Diptera were also noted.

Twelve species of bird were definitely identified:-

Grey Heron *Ardea cinerea*. Up to 7 constantly on shore and reefs or flying over.

Small Green Heron *Butorides striatus*. 1-2 seen frequently on reefs.

Indian Pond Heron *Ardeola grayii*. At least 3 present inland.

Honey Buzzard *Pernis ptilorhynchus*. One overhead 13 Feb., identified as a probable bird of the year by the characteristic tail pattern with fine cross bars between the main broad bars.

Domestic Fowl *Gallus gallus*. Appeared to be established ferally; a brood of young seen well away from the settlement.

White-breasted Waterhen *Amaurornis phoenicurus*. One twice seen well inland. Phillips & Sim (1958) noted that some had become entirely terrestrial.

Whimbrel *Numenius phaeopus*. One on 12 Feb.

Common Sandpiper *Actitis hypoleucos*. Common all over the island, frequently feeding on sandy tracks inland as well as on the shore.

Indian Cuckoo *Cuculus micropterus*. One seen frequently.

Koel *Eudynamis scolopacea*. At least 3 pairs present. House Crows *Corvus splendens* were exterminated some 10 years previously, so that how the Koels are maintaining themselves is something of a mystery.

European Swallow *Hirundo rustica*. Small parties seen twice.

Common Myna *Acridotheres tristis*. One seen several times.

In addition, a single tern, probably *Sterna sumatrana*, was seen twice and on 8 Feb. Mrs. M. S. Fitter briefly saw a bird which could have been a Bronze-wing pigeon *Chalcophaps indica* (blue on head and nape clearly seen), but unfortunately the bird was not seen again.

References:

- Duncan, J. 1973. The birds of Gan. *R.A.F. Orn. Soc. Newsletter* 19: 4-7.
 Gadow, H. & Gardiner, J. S. 1903. *Fauna and Geography of the Maldive and Laccadive Archipelagoes* I. Cambridge: Univ. Press.
 Phillips, W. W. A. & Sim, R. W. 1958. *J. Bombay N.H.S.* 55: 195-217.
 Strickland, M. J. & Jenner, J. C. 1978. A report on the birds of Addu Atoll (Maldiv Islands). *J. Bombay N.H.S.* 74: 487-500.
 Watson, G. E., Zusi, R. L. & Storer, R. E. 1963. *Preliminary Field Guide to the Birds of the Indian Ocean*. Washington, D.C.: Smiths. Inst.

Address: R. S. R. Fitter, Drifts, Chinnor Hill, Oxford OX9 4BS, England.

©British Ornithologists' Club 1981.

Relationships between hermit hummingbirds and their food plants in eastern Ecuador

by Barbara K. Snow

Received 4 March 1981

Hermit hummingbirds, which forage mainly at low levels in forest, provide some striking examples of co-evolution between humming birds and the flowers from which they take nectar. Their feeding ecology has been studied in Trinidad (Snow & Snow 1972, Snow 1973), the Kanaku Mountains of Guyana (Snow 1973), and Costa Rica (Stiles 1975, Snow 1977, Stiles & Wolf 1979). The present paper gives the results of observations made in one of the richest neotropical forest areas, the eastern foothills of the Andes, and discusses the co-evolutionary relationships between this group of hummingbirds and their food-plants.

For 4 weeks, 7 July to 2 August 1976, I was camping with other members of the 1976 Ecuadorean-British Los Tayos Expedition at a height of 600 m in the forested foothills of the Andes in the Morana-Santiago province of Ecuador ($3^{\circ} 06'S$, $78^{\circ} 12'W$). The nearest drainage system was that related to the Los Tayos caves into which the streams sank, eventually to join the Rio Coangos which lay c. 240 m below and to the northwest of the camp. The area was covered with primary rain forest except for a felled area in the immediate vicinity of the camp and patches of Indian cultivation, some abandoned. This cultivation was confined to the few more level areas, mostly small in extent, except for a wide strip, about 30 m above the Rio Coangos, which extended for approximately 1200 m. Apart from these flat areas the hillsides are extremely steep and the forests covering them had an abundant herbaceous layer. Within the study area, extending from just below the ridge (c. 900 m) above the Los Tayos stream to the eastern banks of the Rio Coangos, the following 6 hermit hummingbird species were recorded feeding: *Threnetes leucurus*, *Phaethornis superciliosus*, *P. bourcieri*, *P. longuemareus*, *Eutoxeres aquila* and *E. condamini*. Their weights and measurements are shown in Table 1.

TABLE I
Weights and measurements of Los Tayos hermit hummingbirds

	wing (mm)	weight (g)	culmen (mm)*
<i>Threnetes leucurus</i>	61 (9)	6.0 (2)	34.4 (10)
<i>Phaethornis superciliosus</i>	62 (10)	6.5 (3)	45.0 (10)
<i>Phaethornis bourcieri</i>	56 (9)	4.1 (8)†	34.7 (9)
<i>Phaethornis longuemareus</i>	35 (2)	3.2 (23)‡	25.5 (10)
<i>Eutoxeres aquila</i>	74 (10)	12.2 (1)	33.1 (10)
<i>Eutoxeres condamini</i>	72 (9)	13.0 (3)	36.1 (7)

Weights were taken in the field at Los Tayos unless stated otherwise. Figures in parentheses are number of specimens.

*Length of total culmen, not exposed culmen.

†7 weights from Surinam supplied by Dr. F. Haverschmidt.

‡Weight from Snow & Snow 1963.

Hermit hummingbirds usually feed at low levels, mostly on herbaceous plants but also on vines that flower low down and on bromeliads. Therefore to investigate the range of flowers at which these hermits were feeding, watches of half an hour, or multiples thereof, were kept on all plants found flowering below a height of 5 m above the ground and which had tubular corollas coloured yellow, orange or red. Watches were extended to flowers of other colours if any hermit hummingbird was seen feeding at them. Within these criteria probably all the common plants in flower in July were observed in the study area. Observations were not made in cleared ground except on *Heliconia* aff. *wagneriana*. The flowers at which the hermits were recorded feeding are listed in Table 2 and their corolla shapes are shown in Figures 1-3. Many of these plants have not yet been identified, but specimens of all of them were collected by the botanists on the expedition and are housed at the Royal Botanic garden, Edinburgh. They are referred to here by the botanists' collection numbers.

In addition to the hermits, 7 species of non-hermit hummingbirds were seen or collected in the Los Tayos locality (Albuja & de Vries 1977). Four of these (*Doryfera johannae*, *Campylopterus villaviscencio*, *Popelairia popelairii* and *Taphrospilus hypostictus*) were not observed competing or interacting with any

TABLE 2

Food plants floral characters and hermit hummingbird feeding records

		length (mm)	Corolla width (mm)	corolla colour	bract/calyx colour	Height of flower (ft)	Feeding records (flowers probed)				Total feeding records	Total obs. time (h)
							<i>T.l.</i>	<i>P.s.</i>	<i>P.b.</i>	<i>P.l.</i>	<i>E.s.</i>	
Gesneriaceae.	<i>Drymonia</i> sp. no. 17	54	4	yellow	orange	5-15		8		2		1
		52	3	yellow	red	3-7		57	4			4.5
	no. 237	41	5.5	yellow & red	green	1-2		10		2		1.5
Cucurbitaceae.	<i>Cucurbita</i> sp.	26	4	orange	green	3-4		2		3		0.5
Rubiaceae.	<i>Palicourea</i> sp.	24	2	yellow	green	10				9		0.5
Lobeliaceae.	<i>Centropogon</i> aff. <i>cornutus</i>	38	6	red	green	2-2½				53	140	4
	<i>Heliconia</i> 35	46	5	yellow	red or yellow	2-3				62	5	12.5
Musaceae.	<i>Heliconia</i> 57	56	8	yellow	red	3-4		5		6		3.5
	<i>Heliconia valleriana</i> 23	46	3-3	yellow	red	2-4						6
	<i>Heliconia</i> 58	29	3-3	yellow	red	4-5		1				1.5
	<i>Heliconia</i> 56 (aff. <i>wagneriana</i>)	55	3-5	yellow	red	2-3	14	6			4	24
	<i>Heliconia</i> 306	55	4	yellow/green	pink	2-3				67		6
												12.5
Zingiberaceae.	<i>Costus</i> 102	22	4	yellow	red	3-½			22			3
Bromeliaceae*.	<i>Vriesea</i> aff. <i>rubra</i>	30	2	white	red	2-4			6			3
	<i>Guzmania melinonis</i>	37	3-5	yellow	red	5-10			2			2
	<i>Asplenium strobilaceae</i>	46	4-5	yellow	red	2-1½		16		45		61
	<i>Pitcairnia aphelandriflora</i>	45	4	red	red	2-3		8		4		12
	<i>Pitcairnia</i> aff. <i>quezeloides</i>	37	8	red	red	1-½		17				17
												0.5
Marantaceae.	<i>Monolopia</i> aff. <i>plurispicatum</i>	25	1-5	white	green	2-3		2				1
Family ?	sp. 43 (dicot.)	56	4-5	orange	red	3		1				0.5
Total feeding records												
No. different species												
							16	131	12	87	188	149
							2	11	5	7	4	3

T.l. = *Theromites laevis*. *P.s.* = *Phaethornis superciliosus*. *P.b.* = *P. bourcierii*. *P.l.* = *P. longuemareus*. *E.s.* = *E. condaminii*.

*The bromeliads were identified from photographs and sketches. For botanic species' numbers see text.

of the hermit hummingbirds. *Thalurania furcata* and *Chrysuronia oenone* were territorial over some plant species (*Costus*, *Palicourea*) at which *P. longuemareus* also fed. *Heliothryx aurita* was a nectar-thief, piercing the corolla tube and taking nectar from *Heliconia* 306.

Habitat preferences

There were some recognisable differences in habitat preference between the 6 hermit species. Both *T. leucurus* and *P. longuemareus* frequented second growth associated with cultivation as well as forest, and were commoner at the Rio Coangos level, where there was a lek of *P. longuemareus*, than elsewhere. *P. longuemareus* (but not *T. leucurus*) was occasionally seen feeding along streams, while *T. leucurus* (but not *P. longuemareus*) was seen on the forest slopes well above the Los Tayos stream beds. *P. superciliosus* was the most abundant hermit of the Los Tayos drainage system and commonly fed along its stream banks and also along the Rio Coangos. It was recorded at c. 900 m near the ridge, feeding on the ground bromeliad *Pitcairnia* aff. *quesnelioides*. It visited forest edge but not more extensive second growth. *P. bourcieri* was rather scarce and was not seen below the level of the Los Tayos stream along which it occasionally fed. It also fed up to c. 700 m on 2 bromeliads, *Vriesea rubra* and *Guzmania melinonis*. Neither *Eutoxeres* species was seen feeding above 600 m, but both were found along the Los Tayos stream and Rio Coangos. *E. condamini* was commoner at dispersed nectar sources, including some in second growth.

Flower preferences

Bill shape and to a lesser extent bill length are the chief characters with which flower preferences of the different hermit species could be matched (Figs. 1-3, Tables 1, 2). The most striking match is between the bills of the sicklebills *Eutoxeres* and 3 of the *Heliconias* (35, 23 and 306) and *Centropogon cornutus* (Fig. 1d). Only the sicklebills fed at these 4 plants except for a nectar thief, *Heliothryx aurita*, which has a short straight bill and was seen piercing the corollas of *Heliconia* 306. I spent sufficient time watching these 4 plants (Table 2) to feel confident that no other hummingbird was foraging at them; so in this area at least they are probably dependent on the sicklebills for cross-pollination. Both *E. aquila* and *E. condamini* perch while feeding at heliconias. *Heliconia* aff. *vellerigera* and *Heliconia* 35 both have pendent, distichous inflorescences (Fig. 1a, b); the bracts which contain the flowers open downwards and the sicklebills perch on the bract below and stretch up with head tilted back to insert their beaks into the corolla above. In *Heliconia* 306, the bracts do not enclose the corolla—hence its susceptibility to nectar thieves—but a succession of flowers assume an upright position, growing from the axil of the bract and facing outwards (Fig. 1c).

As the *Eutoxeres* species appear to have exclusive legitimate access to these 4 plant species, territorial behaviour to exclude any other hummingbird except congeners is superfluous. However in places, *Heliconia* 35 and *Heliconia* aff. *vellerigera* grew in very large clumps and a 4-5 foot band of *Centropogon cornutus* was flowering along 40 consecutive metres of the Rio Coangos banks; so all these plants were potentially very concentrated sources of nectar. Equivalent nectar concentrations in flowers with less specialized corolla shapes would, on the other hand, be defended as feeding territories (Stiles 1975, Lyon 1976), with much inter- and intra-specific competition. *E. aquila* and *E. condamini* are not very different in size; *condamini* has a

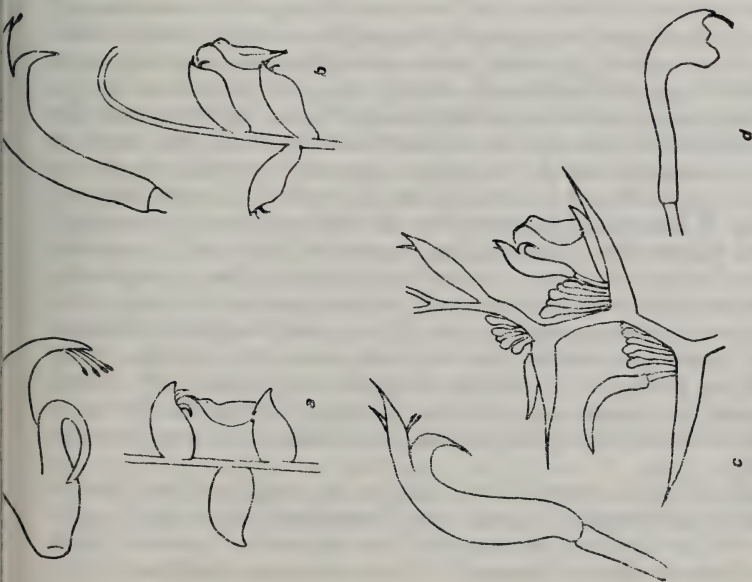


Fig. 1. Flowers at which *Eutoxeres aquila* was observed feeding; (b) and (d) were also fed at by *E. condamini*. (a) *Heliconia* 23, aff. *vellerigera*. (b) *Heliconia* 35. (c) *Heliconia* 36. (All *Heliconias* showing corolla without bract, part of inflorescence and position of *Eutoxeres* when feeding. (d) *Centropogon cornutus* calyx removed.

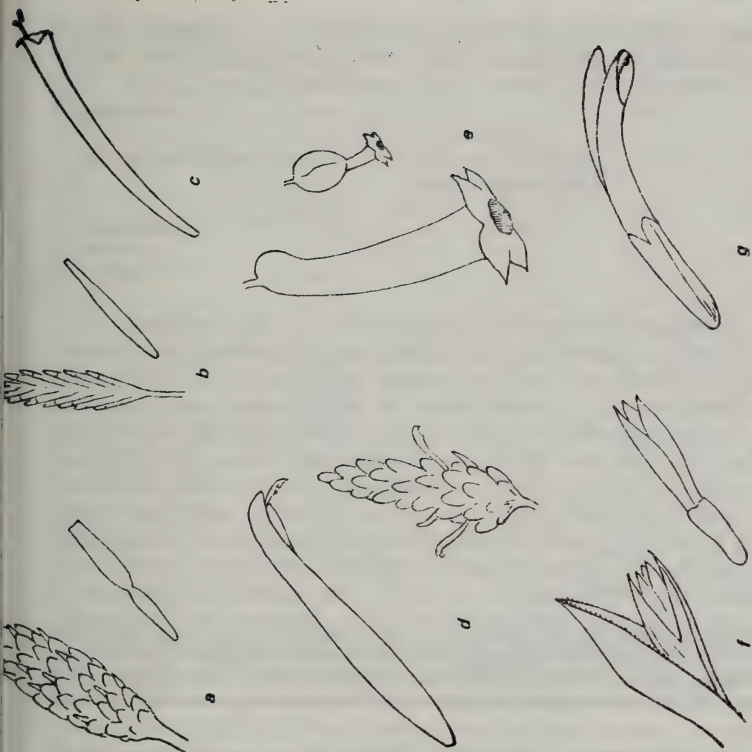


Fig. 2. Flowers at which *Phaethornis bourcieri* (P.b.), *Phaethornis superciliosus* (P.s.) and *Phaethornis longuemareus* (P.l.) were observed feeding. (a) *Guzmania melonitis* (P.b.). (b) *Vriesea aff. rubra* (P.b.). (These 2 bromeliads show the corollas embedded in their protective bracts and corollas without bracts.) (c) Gesneriaceae 17 (P.b. and P.s.), corolla with calyx removed. (d) *Pittainia queneloides* (P.s.) inflorescence and single corolla. (e) *Drymonia* sp. (P.s. and P.l.). Flower with leaf-like bract and single corolla. (f) *Aechmea strobilacea* (P.s. and P.l.), corolla surrounded by protective bracts, and with bracts removed. (g) *Pittainia aphelandriflora*.

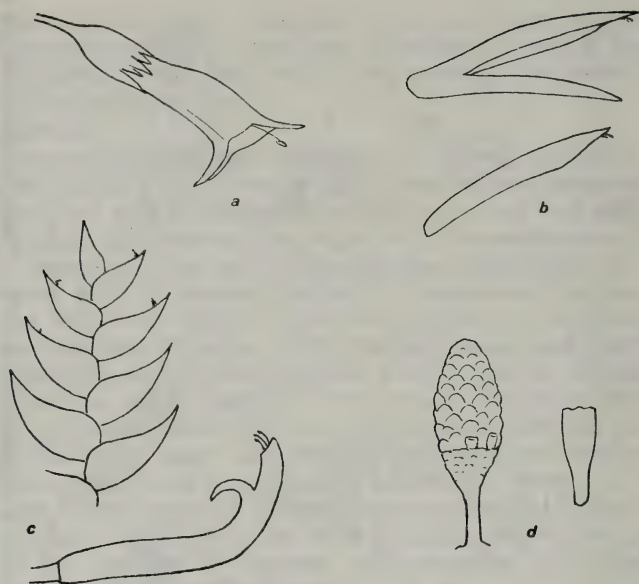


Fig. 3. Hummingbird abbreviations as in Fig. 2. (a) Gesneriaceae 237 (P.s. and P.I.), (b) *Heliconia* 57 (P.s.), corolla and enclosing bract and (below) with free part of bract removed. (c) *Heliconia* 56 (P.s., *T. leucurus* & *E. condamini*), inflorescence and corolla without bract. (d) *Costus* sp. (P.I. & non-hermits), inflorescence cone and corolla removed from cone.

slightly shorter wing but a longer bill (Table 1), so some behavioural differences between them might be expected for co-existence. In fact *E. aquila* showed some territorial behaviour and was seen driving off *E. condamini* and conspecifics. Only *E. aquila* was seen feeding at the 2 shaft entrances of the Los Tayos caves, which provided permanent light gaps enabling large stands of *Heliconia* 35 and *Heliconia* aff. *vellerigera* to grow there. Here also, in the early mornings, it uttered advertising songs from solitary perches. On the other hand, no advertising song or territorial behaviour was heard or seen from *E. condamini* and its foraging suggested interstitial traplining (*sensu* Colwell 1973). Thus it fed at *Heliconia* 56 at which *E. aquila* was not seen to forage. *T. leucurus* and *P. superciliosus* also fed at *Heliconia* 56, hovering at the higher flowers free of entangling vegetation; whereas *E. condamini* perched to feed often at the lower flowers closely entangled in undergrowth. The two patches of *Heliconia* 35 at which *E. condamini* was seen to forage were small ones, also in dense second growth. *E. condamini* foraged at the large stretches of *Centropogon cornutus*, but was here occasionally driven off by *E. aquila*. When feeding at *C. cornutus*, *E. aquila* fed perched with folded wings, whereas *E. condamini* only did so at about a third of the flowers it visited, at the other two thirds clinging on, but continuing to beat its wings while feeding.

The straight bill of *P. bourcierii* closely matches the corollas of the 3 flower species at which it foraged. It shared one, Gesneriaceae 17, with *P. superciliosus*, but it is very unlikely that any other hermits beside *P. bourcierii* fed at the 2 bromeliads at which it foraged. A very narrow constriction of the

corolla (to about 1 mm diameter) in both the bromeliads, at the aperture in *Vriesea rubra* and in the middle of the corolla tube in *Guzmania* aff. *melinonis* (Fig. 2b, a), would make entry by a hermit with a curved bill virtually impossible.

TABLE 3

Percentage feeding at flowers of different corolla lengths by 3 hermit hummingbirds.

	Corolla lengths (mm)				Total records
	20-29	30-39	40-49	50-59	
<i>P. superciliosus</i>	2	8	25	65	137
<i>P. bourcieri</i>		67		33	12
<i>P. longuemareus</i>	39		56	2	87

P. superciliosus was seen foraging at 11 different flower species, with corolla shapes varying from almost straight to moderately curved. Over half of these were also visited by other species of hermit, mostly by *P. longuemareus*. *P. superciliosus* differed from the latter mainly by its preference for flowers with longer corolla tubes (Table 3). The only flower species in full bloom for which *P. superciliosus* appeared to be the exclusive pollinator was the bromeliad *Pitcairnia* aff. *quesnelioides* with a very long corolla. There was fairly conclusive evidence that it avoided the small-flowered *Costus* whose inflorescence cone grows at ground level, as one *Costus* and a ground-living bromeliad, *Aechmea* aff. *strobilacea*, were growing close together and could be watched simultaneously. While *P. longuemareus* visited both plants, *P. superciliosus* came regularly to the bromeliad but ignored the *Costus*.

Three of the plant species at which *P. longuemareus* foraged, *Palicourea* sp., *Gurania* sp. and *Costus*, were also exploited by small non-hermit hummingbirds (*Thalurania furcata* and *Chrysuronia oenone*). The effective corolla lengths (*sensu* Stiles 1975) of these 3 plants were between 22 and 26 mm, compared to 41-54 mm for the 4 species at which both *P. longuemareus* and *P. superciliosus* foraged.

Discussion

In spite of the incompleteness of the data, some comparisons with the feeding of hermits elsewhere are worth drawing. A study by Stiles (1975) of the nectar foraging of 4 hermits (*P. superciliosus*, *E. aquila*, *Threnetes ruckeri* and *Glaucis hirsuta*) on 9 *Heliconia* species in the Caribbean Lowland tropics of Costa Rica showed *P. superciliosus* to be the most abundant hermit, foraging at all the heliconias, whereas *E. aquila* fed at only one species, *H. pogonantha*, which has the most curved corolla. However, all the other hermits and 5 non-hermits also fed at *H. pogonantha*, so *E. aquila* did not have exclusive nectar foraging at any heliconia as the two *Eutoxeres* species appeared to have at Los Tayos.

Possibly the very high rainfall areas of the eastern slopes of the Andes are the centre of evolution of *Eutoxeres*, where co-evolution with heliconias is most advanced. *E. condamini* is confined to this region, but *E. aquila* occurs also on the Pacific slopes of Colombia and Ecuador, and extends north to Costa Rica. Possibly *E. aquila* is derived from a population that was isolated in one of the northwestern forest refuges during the Pleistocene (Haffer 1974) and subsequently spread south to overlap with *E. condamini*. That it may still be spreading south is suggested by a single specimen recently collected in northeast Peru (Zimmer 1950), while *E. condamini* ranges to southeast Peru.

It is interesting that in Costa Rica the 2 main nectar sources for *E. aquila*

are the *pogonantha* group of *Heliconias* (Stiles 1979a) and *Centropogon* species (Stiles, pers. comm.), so near the extremes of the range of *E. aquila* it appears largely to depend on the same plant genera. *Heliconia* aff. *vellerigera* and *Heliconia* 35 have many characters in common with the *pogonantha* group, e.g. very large pendent distichous inflorescences which showed much evidence of being long-lived.

In the tropical forest of the Kanaku mountains of southern Guyana (Snow 1973), *P. superciliosus* was the most abundant of the 4 resident species of hermits, the others being *G. hirsuta*, *T. leucurus* and *Phaethornis ruber*. Thus in 3 well separated areas in Costa Rica, Guyana and Ecuador *P. superciliosus* is the most abundant hermit hummingbird, although the plant species on which it feeds differ in each locality, with the possible exception of one *Heliconia*. In Guyana, as at Los Tayos, *T. leucurus* was rather sparse. The closely related *T. ruckeri* is also relatively sparse in the area of Costa Rica in which it was studied (Stiles 1975). Whatever the factors are which control relative abundance in *P. superciliosus* and species of *Threnetes*, they appear to operate over a wide geographical range and in forest habitats supporting almost entirely different plant species.

Six plant groups (families or genera) together provide a high proportion of the nectar taken by hermit hummingbirds in the 3 places in South America where observations have been made (Table 4). Climatically the Kanaku mountains of Guyana differ from the 2 other areas in having a fairly severe dry season (during which most of the observations were made). Bromeliads were absent and the Passifloraceae, not recorded at the other 2 wetter areas, were important.

TABLE 4

Percentage use of 6 plant families/genera by hermit hummingbirds for nectar feeding.

	Acanthaceae	Bromeliaceae	<i>Heliconia</i>	<i>Costus</i>	<i>Centropogon</i>	<i>Palicourea</i>
Trinidad (782)	18	9	36	9	7	8
Los Tayos (591)		17	29	4	33	2
Guyana (103)	31		4	22		

Figures in parentheses below localities are total feeding records. In Los Tayos one flower probed was one record. In Trinidad and Guyana a record constituted a bout of feeding at a plant species.

At Los Tayos, as elsewhere, many of the hermit-exploited flowers have evolved means of protecting their nectar from illegitimate exploitation by nectar thieves who do not perform pollination. Thus of the six *Heliconia* species at which hermits were feeding three, *Heliconia* aff. *vellerigen*, 35 and 56, have approximately two-thirds of their corollas embedded in a thick, often hairy bract (Figs. 1, 3). *Heliconia* 57 has the corolla and thickened calyx entirely fused (Fig. 3b). The flowers of 2 species are unprotected; one of these, *Heliconia* 306, was seen to have the corolla pierced; no hummingbirds were seen taking nectar from the other, *Heliconia* 58.

Three of the 5 bromeliads (*Vriesea rubra*, *Aechmea* aff. *strobilacea* and *Guzmania* aff. *melinonis*) have approximately two-thirds or more of the corolla protected inside thick-walled bracts, with the flowers concentrated into compound inflorescences: *Guzmania* sp. as a red elongated cone, *Aechmea* sp. as a large round bristling cone at ground level, and *Vriesea rubra* as a flattened branching inflorescence (Fig. 2). The flowers of the two *Pitcairnia*

species are less well protected and many of the corollas of *Pitcairnia aphelandriflora* were found to be pierced just above the calyx (Fig. 2). The *Costus* species also has the base of its corolla embedded in a protective cone (Fig. 3).

As an hypothesis, I suggest that plant genera that have co-evolved with hermit hummingbirds in the direction of increased corolla length or specialized corolla shapes, to match the hermit's increased beak length or curvature, and which also offer a fairly substantial nectar reward to make a visit to these often scattered plants worthwhile—that these plant genera have had to evolve protection for their nectar from short-billed hummingbirds that acquire flower-piercing habits (e.g. *Heliothryx aurita*) and from the flower-piercers *Diglossa* spp. Stiles (1979a) has already suggested this as an adaptation of heliconias that may deter nectar thieves.

Only 2 of the bromeliads utilized by hermits at Los Tayos are epiphytic on trees: *Vriesea rubra* which grew at heights of 1-1.5 m, often on understorey trees, and *Guzmania* sp. which grew at heights of 1.5-10 m. Such low-growing habits are probably also an adaptation for pollination by low-flying hermit hummingbirds.

Gesneriaceae 237, an herbaceous plant 0.5-0.7 m high, presents its yellow flowers so that they are visible only to low-flying hummingbirds. It has a horizontal spread of leaves whose upper surface is green and under surface is red; the yellow flowers grow just below the red under surface of the leaves and are not visible from above. The use of red pigment in otherwise unmodified leaves as part of the attraction unit (*sensu* Stiles 1980) in ornithophilous flowers has been reported in other Gesneriaceae species (Jones & Rich 1972).

Acknowledgements: I should like to thank the Los Tayos Expedition 1976 Trust for their logistic and financial support and the members of the joint Ecuadorean British expedition for their help in the field. I am also indebted to Dr. G. Argent and Dr. Lyman B. Smith for plant identifications and Dr. F. Gary Stiles and my husband Dr. D. W. Snow for helpful comments on the manuscript.

References:

- Albuja, L. & De Vries, T. 1977. Aves colectadas y observadas alrededor de la cueva de los Tayos, Morana-Santiago, Ecuador. *Rev. Univ. Catol. (Quito)* 5: 199-215.
- Colwell, R. K. 1973. Competition and coexistence in a simple tropical community. *Am. Nat.* 107: 737-760.
- Haffer, J. 1974. Avian speciation in tropical South America. *Publ. Nuttall Orn. Cl.* 14.
- Jones, C. E. & Rich, P. V. 1972. Ornithophily and extra-oral color patterns in *Columnea florida* Morton (Gesneriaceae). *Bul. Stb. Calif. Acad. Sci.* 71: 113-116.
- Lyon, D. M. 1976. A montane hummingbird territorial system in Oaxaca, Mexico. *Wilson Bull.* 88: 280-299.
- Snow, B. K. 1973. The behavior and ecology of hermit hummingbirds in the Kanaku Mountains, Guyana. *Wilson Bull.* 86: 163-177.
- 1977. Feeding behavior of two hummingbirds in a Costa Rican montane forest. *Wilson Bull.* 89: 613-615.
- Snow, B. K. & Snow, D. W. 1972. Feeding niches of hummingbirds in a Trinidad valley. *J. Anim. Ecol.* 41: 471-485.
- Stiles, F. G. 1975. Ecology, flowering phenology and hummingbird pollination of some Costa Rican *Heliconia* species. *Ecology* 56: 285-310.
- 1978. Temporal organization of flowering among the hummingbird foodplants of a tropical wet forest. *Biotropica* 10: 194-210.
- 1979a. Notes on the natural history of *Heliconia* (Musaceae) in Costa Rica. *Brenesia* 15, suppl.: 151-180.
- 1979b. Ecological and evolutionary implications of bird pollination. *Am. Zool.* 18: 715-727.
- 1980. Ecological and evolutionary aspects of bird-flower coadaptations. *Acta XVII Int. Orn. Congr.* (in press).

Styles, F. G. & Wolf, L. L. 1979. The ecology and evolution of lek mating behaviour in the Longtailed Hermit hummingbird. *Am. Orn. Union Monogr.* 27.

Zimmer, J. T. 1950. Studies of Peruvian birds. No. 56. *Am. Mus. Novit.* 1450: 1-14.

Address: Barbara K. Snow, Old Forge, Wingrave, Aylesbury, Bucks, England.

©British Ornithologists' Club 1981.

Present abundance of the Warsangli Linnet *Acanthis johannis*

by J. S. Ash and J. E. Miskell

Received 6 May 1981

It seems likely that the present-day status of the elusive Warsangli Linnet *Acanthis johannis* has changed considerably from what it was in the recent past. In May 1979 we found it was one of the commonest small birds round Daloh (10° 45' N, 47° 15' E) in the mountains of northern Somalia, that is in one of the 2 earlier collecting sites; and in May 1980 we saw others at 2 new sites, namely Moon (11° 01' N, 48° 26' E) and Ragad (10° 59' N, 48° 31' E), close to the second earlier collecting site near Musha Aled (11° 00' N, 48° 19' E).

Archer & Godman (1961) reviewed the existing paucity of knowledge about the species (see also Clark 1919, Williams 1956), whose past occurrences and distribution can be summarised as follows:- "On the way up to Musha Aled" 1200 m, 8-9.ii.1919, flock of 25 seen, 1 ♂ collected on 9.ii.1919; Daloh 1800 m, 12-13.viii.1955, small flock, 1 ♀ collected 13.viii and 1 ♂ collected 22.x.55; [Bokh (10° 36' N, 47° 12' E) 1800 m, 1955, stated to occur]; and Tagair (10° 45' N, 47° 24' E) 1760 m, 27.vii.1957, 1 ♂ collected (USNM 487690).

A. R. Tribe who lived at Daloh for some time, and collected all the later specimens, saw more of these linnets in the area on other occasions at 1800-2100 m, and the specimen collected by him at Tagair suggests that there may be still other specimens unrecorded in the literature. Archer's collector was unable to find the birds in nearly 2 months search from March 1919, and neither R. Meinertzhagen in about 1950 nor J. G. Williams in 1954 could find it in the Warsangli country. We intended to look for the species on our journey in May 1979 from Erigavo (10° 38' N, 47° 22' E) to Mait (10° 58' N, 47° 05' E) through Daloh, but hardly expected to find it in the short time at our disposal, particularly in view of the infrequency of sightings in the 60 years since its discovery.

As we approached the Rest House in the Daloh Forest Reserve on 17 May we stopped to watch, as it flew up into a tree, the first Somali Blackbird *Turdus olivaceus ludoviciae* we had seen. Close beside it was a Warsangli Linnet. Within the next hour or two we saw many more of the former, and at least 15 of the linnets within 2 km of the Rest House. On the following morning we caught 19 linnets, all males, in 2 nets by small pools, and noted that the birds were very common. On 19 May at a brief halt in a gorge c. 5 km to the WNW we saw 10 more males, but failed to see any others on the steep descent to the coastal plain. The wing-lengths of the captured birds ranged from 70-80 mm, mean 75.2 (S.D. $\pm$ 2.80) and the weights from 11.8-15.0 g, mean 13.4 (S.D. $\pm$ 0.78).

Daloh is situated in degraded Juniper *Juniperus procera* forest, with some olives and other mixed trees and shrubs, where there were many open areas

due to felling, damage by fire, and cattle-grazing. In places, however, there was a fairly dense under-storey, composed particularly of thickets of a shrubby species of *Salvia*. In spite of searching from dawn onwards, no linnets were seen on 18 May until 0730. Then suddenly they were everywhere, but all were males and no females were identified throughout our brief visit. We estimated that probably 100 males were seen within a radius of 2-3 km of the Rest House. The 19 captured in a few hours, of which none of the 15 ringed was recaptured, at only 2 of the many small pools in the area, supports our view that the species is fairly numerous. By 1300, all had disappeared and a wide search in mid-afternoon failed to trace any.

Gonadal development in 4 males (testes 5-6 mm long) indicated that they were in or near breeding condition, and song was frequently heard and display seen, in spite of the absence of females. In fact, because of their apparent absence, we suspect that they may have been incubating eggs in an area at some distance from Daloh, but no clue was obtained as to where this might have been. Furthermore, the males usually occurred singly, which is again suggestive of breeding, for both Clarke (1919) and Williams (1956) refer to flocks in February and August. A local forest-guard, who knew the birds well, and had worked for A. R. Tribe, claimed they nested in the hollows formed below branches on the trunks of Junipers, but this needs to be substantiated.

Song and call notes. The song was a patternless series of *Serinus*-like notes. The calls were variable, and were described as:- a Goldfinch *Carduelis carduelis*-like "tsee-wit", a Willow Warbler *Phylloscopus trochilus*-like "tweek", a twittering "sis-sis-sis", and a clear "sweet-ee". Most of the song was in the early morning.

Habits. Easily identified in flight as a small black and white bird with large white wing patches and a chestnut and whitish rump. They have a distinct preference for high exposed perches at the end of dead branches on trees, where, immediately on alighting, they strenuously wipe their bills. Unlike Tribe (Williams 1956) we did not find them very shy and alert, nor extremely difficult to approach.

Food. One bird was watched feeding on low grass seeds, taken from the plant, but all others seen feeding were eating the green seeds of the *Salvia* from places where the flower-head had just been shed. This attachment to green seeds was borne out by the considerable amount of green discolouration round the bills of captured birds, and probably also accounted for the frequent bill-wiping.

Display. One male on a branch approached another with bill raised in the air with fluttering (or trembling) wings extended downwards. Both soon flew off to engage in aerial pursuit and much bickering in which a third bird joined in.

Associated species. No close association was noticed with any other species present. Characteristic birds of the same habitat included:- Somali Blackbird, very common (nests found with eggs and nestlings); Little Rock-Thrush *Monticola rufocinerea*, common; White-breasted White-eye *Zosterops abyssinica socotrana*, common; Ring-necked Dove *Streptopelia capicola*, fairly common; Red-eyed Dove *S. semitorquata*, fairly common; Olive Pigeon *Columba arquatrix*, common; Brown-rumped Seedeater *Serinus tristriatus*, very common; Red-fronted Tinkerbird *Pogoniulus pusillus*, common; Brown Woodland Warbler *Phylloscopus umbrovirens*, common; Paradise Flycatcher

Tchitrea viridis, common; Somali Chestnut-winged Starling *Onychognathus blythii*, common; Black-headed Bush-Shrike *Tchagra senegala*, fairly common; Richard's Pipit *Anthus novaeseelandiae*, very common; Long-billed Pipit *A. similis*, fairly common; Grey-backed Camaroptera *Camaroptera brevicaudata*, common.

In May 1980 our time in the mountains was even shorter. On 10 May we travelled south from Los Khoreh (11° 09'N, 48° 12'E) on the coast and spent the afternoon, night, and following morning at Musha Aled (1300 m). On 11 May we travelled eastwards through Hawash Awal (11° 00'N, 48° 19'E) to Moon 19 km away and Merce (11° 00'N, 48° 24'E) at 27 km, thence to the end of the track at 31 km at Ragad. Three linnets were seen at Moon, and another at Ragad. We then returned to Hawash Awal and ascended the track for 9 km to camp at the highest point at 1800 m. No other linnets were seen, and no clues obtained as to their breeding area. The bird seen at Ragad at midday came up from a sheer cliff face, but a careful search of several other cliffs the following day failed to reveal any more individuals. The area around Musha Aled and Ragad is devoid of Juniper forest, although it may well have been forested in the recent past. Towards Ragad there were a few small Junipers, and a few taller trees amongst the scrub, particularly *Ficus* sp. in the gulleys.

Daloh is some 120 km west of Musha Aled and from local accounts we gathered that the intervening country consists of much suitable habitat for this escarpment-edge species, and similar habitat probably continues for at least a further 100 km eastwards. Thus we expect the range of *A. johannis* may extend along 200-250 km of the Somalia highlands, but only over a very narrow strip a few kilometres wide between 1200 and 2400 m. The present observations suggest its numbers may have increased in recent years and it is clearly no longer the "exceedingly rare bird" referred to by Archer & Godman. Forest destruction could be a contributory factor actually favouring the species, since it opens up denser stands of relatively close canopy forest. Much further investigation is needed to establish the whole distribution, status and breeding habitats of this linnet, but the known area is difficult of access and still virtually unknown ornithologically.

We did not see any of these linnets in the mountains east of Bosaso (11° 17'N, 49° 11'E), but the mountains are very bare and arid, and apparently do not have any suitable habitat. To the west a road is under construction which will open up the rugged terrain east of Ragad, and will make areas of Juniper forest more easily accessible.

Acknowledgements: We thank Mr. Ali Murshid for all his help on our visit to Daloh in 1979.

References:

- Archer, G. & Godman, E. M. 1961. *The Birds of British Somaliland and the Gulf of Aden*. Gurney & Jackson: London.
 Clarke, S. R. 1919. Description of a new genus *Warsanglia* and five new forms from Somaliland. *Bull. Brit. Orn. Cl.* 40: 48-50.
 Williams, J. G. 1956. The re-discovery of *Warsanglia johannis*. *Ibis* 98: 531-532.

Addresses: Dr. J. S. Ash, National Museum of Natural History, Smithsonian Institution, Washington, D.C. 20560, U.S.A.

J. E. Miskell, 11 Second Street, Geneseo, N.Y. 14454, U.S.A.

A new race of the Scaly Babbler *Turdoides squamulatus* from Somalia

by J. S. Ash

Received 4 March 1981

A babbler *Turdoides* sp. living in riverine scrub along the Webi (River) Shebelli in southern Somalia is very similar to other babblers seen upstream further to the north in Ethiopia. My identification of these birds in the field was uncertain, but the collection of specimens has shown that they belong to a distinct new subspecies of the Scaly Babbler *Turdoides squamulatus* (Fig. 1).

I propose to name this distinctive race:

Turdoides squamulatus carolinae subsp. nov.

Diagnosis: a white-headed race except for darker crown and nape.

Type: full-grown, collected at 7 km northeast of Afgoi (at 02° 11'N, 45° 10'E), southern Somalia, 11 December 1978, by J. S. Ash, collector's number 214, USNM 571274.

Measurement of type: wing 105, tail 100, bill from skull 22 mm.

Distribution: riverine scrub at low altitude along the Webi Shebelli from Afgoi to Jiohar in Somalia and from Callafo to Imi in Ethiopia and probably along the intervening stretch of river.

This bird is named for my daughter who saw it with me in Ethiopia and Somalia and drew the accompanying illustration from my specimens.

In 1971 I travelled along the Webi Shebelli with my wife and daughter, from 05° 25'N, 44° 30'E near Mustahil, to Imi, and found this babbler at Callafo, at Imi and at a point between the 2 localities (see Appendix). At the time they were tentatively identified as White-headed Babblers *Turdoides leucocephala* because of the absence of pale rumps and their largely white heads. We did not know then that this area was far outside the range of distribution of this species. Unfortunately a captured bird was not collected, and the colour film on which it was photographed was lost in the post. However, I failed to see any sign of the species on further visits to the area in April 1974 and October/November 1975; but further south in Somalia similar babblers were found in the Afgoi-Jiohar area on the Shebelli, and specimens were collected (Table 1).

TABLE 1
Details of *Turdoides squamulatus* collected in Somalia (in mm and g)

Ref.	Subspecies	Locality	Date	Sex	Wing	Weight
a	<i>T.s.jubaensis</i>	Gelib, Juba	12.x.78	♀	100	—
b	<i>T.s.jubaensis</i>	Gelib, Juba	12.x.78	♂	98	—
c	<i>T.s.jubaensis</i>	Fanole, Juba	4.v.79	♀	96	—
d	<i>T.s.jubaensis</i>	Fanole, Juba	4.v.79	♂	102	—
e	<i>T.s.carolinae</i>	Afgoi, Shebelli	11.xii.78	♀	105	—
f	<i>T.s.carolinae</i>	Afgoi, Shebelli	3.ii.79	♂	100	65.0
g*	<i>T.s.carolinae</i>	Callafo, Shebelli	13.ix.71	♂	106	62.1
h	<i>T.s.squamulatus</i>	40km S of Kolbio	24.ix.79	♀	101	83.4

*not collected ♂ = Unsexed

Turdoides squamulatus is one of a group of 12 species of Afrotropical babblers which have been divided into 2 distinct superspecies by Hall & Moreau (1970). These authors show that although they now have a continuous distribution, this must once have been very disrupted for so much speciation to have developed. The species *T. squamulatus* is distinguished from other species in the genus by a combination of characters which

TABLE 2

Differences in head pattern between *Turdoides squamulatus jubaensis* (a in Table 1) and *T. s. carolinae* (e in Table 1).

	<i>jubaensis</i>	<i>carolinae</i>
Forehead	Blackish-grey with narrow ashy fringes	White
Crown	Blackish-grey with narrow pale brown fringes	Black with broad ashy fringes, interspersed with all white feathers
Nape	Greyish brown with faint paler fringes	Similar, but admixed with all white feathers
Lores and ear coverts	Blackish grey	White
Above eyes	As crown	White
Sides of face	As ear coverts	White
Chin	White	White
Sides of neck	Greyish brown with narrow white fringes	White, admixed with a few feathers with brownish grey centres



Fig. 1. Heads of *Turdoides squamulatus*. From top to bottom: *T. s. carolinae*; *T. s. jubaensis*; *T. s. squamulatus*.

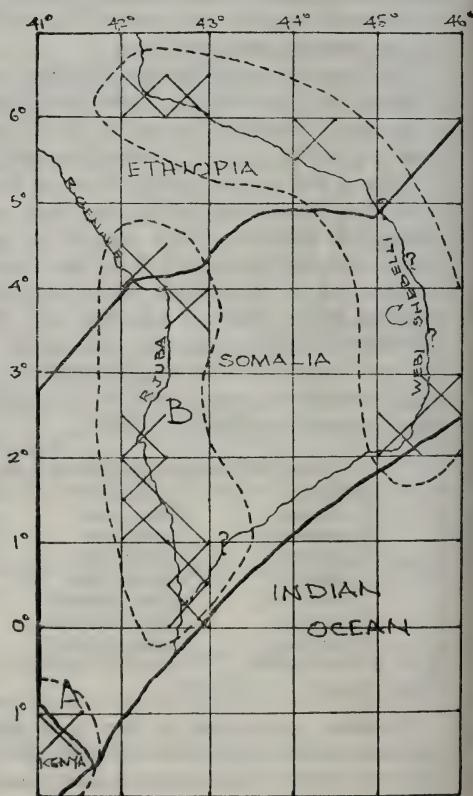


Fig. 2. Distribution of the three subspecies of *Turdoides squamulatus* in Somalia and Ethiopia. A = *squamulatus*; B = *jubaensis*; C = *carolinae*.

includes: absence both of clear white head (although this may not apply to the northern population of *carolinae*) and of white rump, presence of pale brown underwing coverts and a yellow eye. The nominate race is restricted to a very small range in dense coastal bush in Kenya from Lamu to Vanga (White 1962), extending up the Tana River to above Garsen (Britton 1980). It almost certainly occurs along the coast north of Lamu, for it is known now from southern Somalia (see Appendix).

Isolated from the nominate race, to the north is *T. s. jubaensis*, distributed along the Juba River from Dolo to Mareri (see Appendix). This race is lighter and greyer above and has less dusky ear coverts. The details for my specimens from Somalia, and for the one handled in Ethiopia are given in Table 1. In the fresh skins examined the two May *jubaensis* (*c* and *d*) are very similar to the two October birds (*a* and *b*) collected only a few kilometres apart along the Juba, except that the whole of their upperparts below the head, including wings and tail is browner, brownish-olive as opposed to greyish-olive, although *b* is slightly browner than *a*. Similarly, on the upperparts, all feathers showing greyish colouration in *a* and *b* are browner in *c* and *d*. The most striking difference between *carolinae* from the Shebelli and *jubaensis* is the amount of white on the head. The December Afgoi bird (*e*) has upperparts much the same colour as the October *T. s. jubaensis* from Gelib, but the February bird (*f*) is slightly browner than *e*. The same comments apply to the underparts, except that the Afgoi birds are slightly paler grey, and the brownish wash on the flanks is less extensive and somewhat greyer. However, it is in the head region that they differ mostly (Fig. 1 and Table 2).

The second Afgoi bird (*f*) is essentially similar except that the forehead has one or two feathers, and the crown has more feathers, with black centres, and their pale fringes are narrower. As stated above, no specimens nor description exist for birds from Ethiopia, but my impression is that the latter were even whiter in the head region, so much so that they were thought to be *T. leucocephala*. *T. s. squamulatus*, which just reaches southern Somalia (Fig. 2), is a darker bird, without a white throat patch and with a blackish crown and ear coverts.

A pair of *carolinae* was seen with nesting material on 20 October; the ♀ *squamulatus* had slightly advanced gonads (largest ovum 1.5 mm) on 24 September.

In the field, *carolinae* is mainly silent and unobtrusive, although occasionally a party call together loudly in typical babbler fashion and sometimes emerge from thick cover into the open. The Afgoi *carolinae* show a great deal of white on the head, unlike *jubaensis* whose heads, except for a white throat, look all dark (an exception was a bird on 2 October 1979 at Shongolo, which possessed several white feathers in the head region and therefore approached *carolinae*). *squamulatus* is darker still and any whiteness is reduced to a scaly pattern (Fig. 1). The absence of a white rump, in connection with a bright yellow eye, rules out any race of the White-rumped Babbler *T. leucopygius*.

In Ethiopia and Somalia no other species of *Turdoides* babbler occurs alongside *T. squamulatus*, but not far away to the west in the upper reaches of the Webi Gestro (06° 59'N, 40° 44'E) near Ghinnir, there is another species with uniform brown upperparts, brownish white underparts, pale (?yellowish brown) underwing coverts and a red eye, which needs to be collected and named.

T. squamulatus therefore occurs in 3 races through eastern Kenya, southern

Somalia and southeastern Ethiopia (Fig. 2), showing a discontinuous cline of decreasing white-headedness from north to south, thus paralleling the situation of *T. leucopygius* in Ethiopia. Probably the most northerly *T. squamulatus*, in Ethiopia, which have even whiter heads, are isolated from those in Somalia, and may in due course require taxonomic separation. Along both the Shebelli and Juba rivers their riverine habitat is being destroyed at an alarming rate, and both races are inevitably threatened.

Acknowledgements: I thank the following who helped in procuring and preparing specimens: C.P.-J. Ash, Dr. R. L. Bruggers, Shamsa Omar Dahir, Omar Mohamed Hersi, Yussuf Ahmed Jimale, J. E. Miskell, A. A. Murshid and J. Mwaki; also Dr. G. E. Watson for much help in the examination of specimens, and my daughter Caroline for the drawing shown as Fig. 1.

APPENDIX

Records of the 3 races of Scaly Babbler *Turdoides squamulatus* in Ethiopia and Somalia.

Locality	Coordinates		Date	Number	Observers
<i>T.s.squamulatus</i>					
c.30km S of Kolbio	01°22'S,	41°23'E	19.ix.79	1p	Ash & Miskell
40km S of Kolbio	01°28'S,	41°27'E	24.ix.79	1p(1 coll.)	Ash & Miskell
<i>T.s.jubaensis</i>					
Serenli	02°23'N,	42°18'E			Van Someren 1929**
Hellesheid	00°38'N,	42°45'E			Van Someren 1929
Lugh	03°48'N,	42°32'E			Van Someren 1932
Dawa River	04°10'N,	42°06'E	29.iv.01	♂	Erlanger 1905
Dolo	04°10'N,	42°06'E	30.iv.01	2♂,1♀	Erlanger 1905
Salakle	01°50'N,	42°17'E	6.vi.01	♂	Erlanger 1905
Solole	c.01°25'N,	42°25'E	11-14.vi.01	2♂,1♀	Erlanger 1905
Bua	c.00°31'N,	42°47'E	28.vi.01	2♂,10	Erlanger 1905
Dolo	04°10'N,	42°06'E	16.iv.11	1	Salvadori 1912
Serenli	02°23'N,	42°18'E			Van Someren 1931
Mareri	00°25'N,	42°43'E	1979	?	Haslam 1980
Shongolo	00°47'N,	42°38'E	11.x.78	2p	Ash
Gelib	00°29'N,	42°47'E	11.x.78	1p	Ash
Mareri	00°25'N,	42°43'E	29.ix.79	3p	Ash & Miskell
Shongolo	00°47'N,	42°38'E	2.x.79	VC	Ash & Miskell
Gola	01°24'N,	42°27'E	3.x.79	Sev.pp.	Ash & Miskell
Mansur	02°12'N,	42°15'E	4.x.79	1p	Ash & Miskell
(Far Sarei	01°01'N,	43°22'E	20.ii.80	2p	Ash & Miskell)*
Shongolo	00°47'N,	42°38'E	24.ii.80	2p	Ash & Miskell
Shonde	01°03'N,	42°35'E	26.ii.80	4p	Ash & Miskell
Fanole	00°28'N,	42°47'E	4.v.79	1♂,1♀	Y. A. Jimale
<i>T.s.caroliniae</i>					
Callafo	05°36'N,	44°13'E	13.ix.71	2p(10+)	Ash
Gode(117km W)	06°18'N,	42°35'E	16.ix.71	3	Ash
Imi	06°28'N,	42°10'E	17.ix.71	3	Ash
Near Afgoi	02°11'N,	45°10'E	1978-1980	Often	Ash & Miskell
Balad	02°23'N,	45°24'E	21.xii.78	1p	Ash
Balad	02°23'N,	45°24'E	23.xii.79	3+	Ash
Jiohar	02°47'N,	45°31'E	30.i.80	6	Ash

Note. p = party; pp = parties; * = heard only; VC = very common; o = sex unknown.

**The data in Van Someren's papers are rather confusing; according to the card index of his specimens in the possession of his son, Dr. G. R. Cunningham-van Someren, there were 7 specimens. These came from Hellesheid, Serenli and between Lugh and Serenli, in July 1922 and February 1923.

References:

- Britton, P. L. (ed.). 1980. *Birds of East Africa*. EANH: Nairobi.
- Erlanger, C. F. v. 1905. Beiträge zur Vogelfauna Nordostafrikas. *J. Orn.* 3: 433-499.
- Hall, B. P. & Moreau, R. E. 1970. *An Atlas of Speciation in African Passerine Birds*. Trustees of the British Museum (Natural History): London.
- Haslam, J. 1980. Birds recorded from Mareri, Somalia, in 1979, with additional notes from the coast. Duplicated report: pp.13.
- Salvadori, T. 1912. Missione per la frontiera italo-etioptica sotto il comando del Capitano Carlo Citerri. Risultati Zoologici. Uccelli. *Ann. Mus. Civ. Stor. Nat.* 45: 304-327.
- Van Someren, V. G. L. 1929, 1931. Notes on the birds of Jubaland and the Northern Frontier. *J. East Afr. & Uganda Nat. Hist. Soc.* Nos. 35, 37.
- 1932. Birds of Kenya and Uganda, being addenda and corrigenda to my previous paper in "Novitates Zoologicae", XXIX, 1922. *Novit Zool.* 37: 251-380.
- White, C. M. N. 1962. *A Revised Check List of African Shrikes . . . Babblers*. Government Printer: Lusaka.

Address: Dr. J. S. Ash, Division of Birds, National Museum of Natural History, Smithsonian Institution, Washington D.C. 20560, U.S.A.

©British Ornithologists' Club 1981

BOOKS RECEIVED

Jennings, M. C. 1981. *The Birds of Saudi Arabia: a Check-list*. Pp. 1-112. The author, 10 Mill Lane, Whittlesford, Cambridge, England. £6.30, post-free (£7.30 air mail).

This is the first time that an attempt has been made to define the status and range of the 410-odd species recorded within the Kingdom. The breeding avifauna (some 150 species) of Saudi Arabia belong predominantly with the Palaearctic Region but Afrotropical and Oriental elements are also represented. In addition, there are over 200 species which occur only as passage migrants. There are 4 maps: the first illustrates 7 suggested ornithological sub-divisions (referred to as "regions") of Saudi Arabia; the 3 others show respectively localities mentioned in the text, mean annual rainfall and relief. Also worth mentioning are attractive line drawings by Dr. C. J. F. Coombs of the Quail and 3 species of bustard, and distribution maps of 117 of the breeding species. This work will be essential to any ornithologist resident in or visiting Saudi Arabia and doubtless useful to any student of the Arabian peninsula. The author is to be commended for his enterprise in sponsoring publication himself.

Oberlé, Philippe (Ed). 1981. *Madagascar. Un Sanctuaire de la Nature*. Pp. 118, 103 illustrations in colour, 13 in black-and-white, 4 maps. Lechevalier S.A.R.L., 19 rue Aûgereau, Paris 7e. Fr. 145 (including postage).

Contains 8 chapters by well known specialists, the first by Recteur Paulian, and concludes with a useful bibliography. Many of the illustrations are outstanding and for these alone this volume should excite general interest in the cause of conservation in Madagascar, which, indeed, is a problem of outstanding importance in view of the remarkable degree of endemism there. The chapter on birds by C. W. Benson alone covers 4 endemic families, while the endemic genus *Coua* (in the Cuculidae), for example, has radiated into 10 species. In the list of species Benson was obliged to follow the nomenclature in the book by Milon *et al.* (1973) on the birds of Madagascar: hence *Apus apus balstoni* instead of *A. barbatus balstoni* and *Pseudocossyphus imerinus* instead of *Monticola sharpei* are used. Altogether a most commendable publication.

Gotch, A. F. 1981. *Birds—Their Latin Names Explained*. Pp. 1-348. Blandford Press: Poole, Dorset. £10.95.

An elementary introduction to the nomenclature of birds (following the author's similar publication for mammals). The first 40 pages explain the rudiments of classification, while the rest of the book gives the derivations of the scientific names of some 1850 species, chosen arbitrarily apparently as a cross-section of the world's 8600-odd species. The syllables of each generic name are usually straightforwardly translated, the

specific names, so often plain adjectives, more readily so. Where a proper name occurs in the scientific name, a very short biographical note of the individual is given. The author usually ventures reasons for particular names having been attached to particular species, some most intriguing, but perhaps sometimes with more journalistic imagination than that of the originator of the name. With each species is given its world distribution, but so briefly that it is frequently too misleading to have been worth including. A glossary of the translations of the Latin and Greek words used in the scientific names of the birds chosen would have been a useful addition.

Long, J. L. 1981. *Introduced Birds of the World*. Pp. 1-528. 425 distribution maps, 215 line drawings. David and Charles: Newton Abbot, Devon.

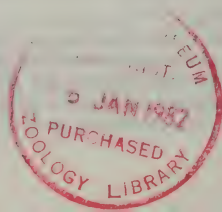
A nicely produced, heavy volume, well researched and attractively illustrated, with detailed maps and an extensive bibliography of 24 pages in small print, covering 425 species introduced, successfully or otherwise, world wide. Each species has sections on distinguishing characteristics, native range and introduced distribution, 'notes on introductions', general habits and 'damage' (i.e. the adverse or other effects the introduction may have had on the native avifauna). Each of the families has a detailed tabulated summary and there are other analytical tables. A scholarly and important reference work, with the unusual additional asset of 215 pleasing drawings by Susan Tingay.

The Oman Flora and Fauna Survey 1977 (Dhofar). The Journal of Oman Studies. Special Report No. 2. Pp. 400, map, illustrated in colour and black-and-white. Office of the Government Adviser for Conservation of the Environment, Muscat, Oman. £20.

A lavish book produced to a high standard, with some outstanding colour reproductions. Following a foreword from H.M. the Sultan Qaboos Bin Said of Oman there is a brief introduction by M. D. Gallagher, one of the 4 editors, of whom the others are S. N. Shaw Reade, J. B. Sale and R. H. Daly. There is coverage of the topography, ecology, vegetation, invertebrates and vertebrates of Dhofar and other parts of Oman. The section on birds by M. D. Gallagher and T. D. Rogers occupies 40 pages. The survey in autumn 1977 observed 188 bird species, of which 91 are discussed in the systematic list, which gives much new data on distribution and behaviour. 43 of the 91 species have only recently been recorded in Oman, 10 of them (sight records) probably new to Arabia and 16 species have recently been proved to breed, at least one for the first time in Arabia. There is a rather general bibliography and a short gazetteer. Much valuable information appears to have been collected in Dhofar, but it is in danger of being obscured by the prestigious appearance of this attractive but expensive book.

Millington, R. 1981. *A Twitchee's Diary*. Pp. 1-92. Illustrated by the author. Blandford Press: Poole, Dorset. £8.95.

The subtitle is 'The birdwatching year of Richard Millington' and it is just that. The text is a bare diary with field description, made more pleasurable by the author's own true to life drawings of his more spectacular sightings. There is a short but spirited defence of the convinced twitcher, the most dedicated of which genus have seen the incredible number of 300 species in the U.K. in a single year, though only a handful of them have passed this magic barrier, including the author with 303 in 1980. No-one will disagree with the author that a twitcher is a "bird-fanatic", one who "is prepared to travel extensively to try to see for himself [for whom else, indeed?] as many different species as possible"; but that he is always "a scientist, a sportsman and a conservationist" may be more contentious. It is clear that the great majority are as well-intentioned as most more ordinary birdwatchers, but, as always, there is a thoughtless minority who create adverse criticism in both brands of bird-lovers. It must also be fairly said that numerous twitchers have added considerably to the knowledge of field characters of the less common and rare "British" birds in the past 2 decades.



NOTICE TO CONTRIBUTORS

Papers, whether by Club Members or by non-members, should be sent to the Editor, Dr. J. F. Monk, The Glebe Cottage, Goring, Reading RG8 9AP, and are accepted on the understanding that they are offered solely for publication in the *Bulletin*. They should be typed on one side of the paper, with double-spacing and a wide margin, and submitted with a duplicate copy on airmail paper.

Scientific nomenclature and the style and lay-out of papers and of References should conform with usage in this or recent issues of the *Bulletin*, unless a departure is explained and justified. Photographic illustrations, although welcome, can only be accepted if the contributor is willing to pay for their reproduction.

An author wishing to introduce a new name or describe a new form should append *nom.*, *gen.*, *sp.* or *subsp. nov.*, as appropriate, and set out the supporting evidence under the headings "Description", "Distribution", "Type", "Measurements of Type" and "Material examined", plus any others needed.

A contributor is entitled to 10 free reprints of the pages of the *Bulletin* in which his contribution, if one page or more in length, appears. Additional reprints or reprints of contributions of less than one page may be ordered when the manuscript is submitted and will be charged for. Authors may be charged for proof corrections for which they are responsible.

BACK NUMBERS OF THE BULLETIN

Available on application to Dr. D. W. Snow, British Museum (Natural History), Tring, Herts, as follows: 1981 (Vol. 101) £3 each issue, 1980 (Vol. 100) No. 1 £4. No. 2, 3 & 4 £2 each, 1973-1979 (Vols. 93-99) £2 each issue (4 per year), 1969-72 (Vols. 89-92) £1.50 each issue (6 per year), before 1969 £1.00 each issue (generally 9 per year); Indices: Vol. 70 and after £1 each, Vols. 50-69 £2 each and Vol. 49 and before £4 each. Long runs (at least 10 years) for Vol. 50 and after are available at reduced rates on enquiry, but higher price may otherwise be charged for numbers that are scarce or have been specially reprinted. Orders over £50 are post free.

MEMBERSHIP

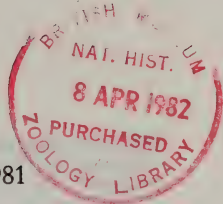
Only Members of the British Ornithologists' Union are eligible to join the Club: applications should be sent to the Hon. Treasurer, Mrs. D. Bradley, 53 Osterley Road, Isleworth, Middlesex, together with the current year's subscription. The remittance and all other payments to the Club should always be in *sterling* unless an addition of £1.00 is made to cover bank charges for exchange, etc. Payment of subscription entitles a Member to receive all *Bulletins* for the year. Changes of address and revised bankers' orders or covenants (and any other correspondence concerning Membership) should be sent to the Hon. Treasurer as promptly as possible.

SUBSCRIPTION TO BULLETIN

The *Bulletin* may be purchased by non-members on payment of an annual subscription of £13.00 (postage and index free). Send all orders and remittances in sterling, unless an addition of £1.00 is made to cover bank charges, to the Hon. Treasurer. Single issues may be obtained as back numbers (see above).

CORRESPONDENCE

Correspondence about Club meetings and other matters not mentioned above should go to the Hon. Secretary, R. E. F. Peal, 2 Chestnut Lane, Sevenoaks, Kent TN13 3AR.



LIST OF MEMBERS:

AMENDMENTS UP TO 31st DECEMBER 1981

(Compiled by Mrs. D. M. Bradley and R. E. F. Peal)

New Members

- ASPINWALL, D. R., Box 50093, Lusaka, Zambia.
 BARTON, Ms J., B.Sc., 16 Heswall Avenue, Clock Face, St. Helens, Merseyside WA9 4DR.
 BOKERMAN, W. C. A., B.Sc., Fundacao Parque Zoologica de Sao Paulo, Caixa Postal 12954, 01000 Sao Paulo S.P., Brazil.
 BORRAS HOSTA, A., Poeta Mistral 10, 1^o-3 Manresa, Barcelona, Spain.
 BOUGHTON, R. C., Dippers Back, Ennerdale Bridge, Ennerdale, Cleator, Cumbria CA23 3AZ.
 BRYANT, D. M., PH.D., Dept. of Biology, University of Stirling, Stirling FK9 4LA.
 CARTER, A. G. T., B.Sc., UNICEF, P.O. Box 1358, Khartoum, Sudan.
 CLARK, K. W. F., 136 Evans Road, Bloomfield, NJ 07003, U.S.A.
 COLDICOTT, N. P., Ibis Tours, 148 Gloucester Road North, Filton, Bristol, Avon.
 COOMBER, R. F., 4 Staffa Cottages, Tobermory, Isle of Mull, Argyllshire PA75 6PL.
 COPLEY, S. C., 67 Porlock Avenue, Weeping Cross, Stafford ST17 0HT.
 CROCKER, N. J., 1 Westfield Terrace, Longford, Gloucester GL2 9AZ.
 DOWNS, Dr. W. G., M.D., M.P.H., 10 Halstead Lane, Branford CT 06405, U.S.A.
 DZUBIN, A., M.A., Conservation & Wildlife Service, 115 Perimeter Road, Saskatoon, Saskatchewan, Canada S7N 0X4.
 FERGENBAUER, Frau A., DIPL.BIOL., Hohemarkstr 33, D 6000, Frankfurt 101-50, West Germany.
 GALEY, C. P., 162 Ramsey Road, St. Ives, Cambs. PE17 4QY.
 GEPP, A. R. M., Casilla Correo 6185, Montevideo, Uruguay.
 GOCHFELD, Dr. M., M.D., Environmental & Community Medicine, Rutgers Medical School, Piscataway, NJ 08854, U.S.A.
 GOODMAN, S. M., 2007 Fishbeck Road, Howell, MI 48843, U.S.A.
 HACKING, Dr. C. N., M.B., B.S., B.Sc., 26 Brandling Place South, Jesmond, Newcastle-upon-Tyne NE2 4RU.
 HAFER, Dr. J., Tommesweg 60, 4300 Essen 1, West Germany.
 HALE, Prof. W. G., PH.D., 5 Ryder Close, Aughton, Ormskirk, Lancs.
 HODGSON, M. C., M.S., 3 Coval Road, London SW14 7RW.
 HOUNSOME, M. V., PH.D., Manchester University Museum, Oxford Road, Manchester M13 9PL.
 HOUSTON, D. C., D.PHIL., Dept. of Zoology, University of Glasgow, Glasgow G12 8QQ.
 HOWE, S., B.Sc., Alma House, 12 William Street, Torphins, Grampian AB3 4JR.
 JACKSON, S. J., 1 The Green, Giggleswick, Settle, N. Yorks. BD24 0BL.
 JENNINGS, P. P., c/o 1 Selbourne Court, Tavistock Close, Woodley Estate, Romsey, Hants.
 JENSEN, F. P., Hovmålvej 84-18, DK 2300, Sundby, Denmark.
 JOHNSON, Mrs. Hazel M., PH.D., Glenside, 11 Quarry Heads Lane, Durham City DH1 3DY.
 KING, J., 96 Forbes Avenue, Potters Bar, Herts. EN6 5NQ.
 KING, Warren B., B.A., 871 Dolley Madison Boulevard, McLean, VA 22101, U.S.A.
 LAMOTHE, Ms Lorraine, B.Sc.F., P.O. Box 134, Bulolo, Papua, New Guinea.
 LANGHAM, N. P. E., PH.D., School of Natural Resources, University of the South Pacific, P.O. Box 1168, Suva, Fiji.
 LAWN, M. R., 20 Croft Road, Godalming, Surrey GU7 1BY.
 LOVEJOY, T. D., PH.D., World Wildlife Fund U.S., 1601 Connecticut Ave. N.W., Washington DC 20009, U.S.A.
 McLAUGHLIN, T. J., Lisnacarrig, Brighton Road, Foxrock, Co. Dublin, Eire.
 MADGE, S. C., 1 Caudle Hill, Fairburn, Knottingley, W. Yorks. WF11 9JQ.
 MEETH, P., Bramenlaan 5, 2116 TR Bentveld, Netherlands.
 METCALFE, J. W. W., Four Corners, Church Lane, Barnwell, Peterborough PE8 5PG.
 MOREBY, C., B.Sc., 313 Streetsbrook Road, Solihull, W. Midlands B39 1RS.

- NOCEDAL, J., Monte Alban 377, Mexico 13, DF Mexico.
 O'CONNOR, R. J., D.PHIL., Beech Grove, Tring, Herts. HP23 5NR.
 POMEROY, D. E., PH.D., Dept. of Zoology, Kenyatta University College, Box 43844, Nairobi, Kenya.
 PRENDERGAST, Col. E. D. V., Manor House, Bagber, Sturminster Newton, Dorset DT10 2EY.
 PRINCE, P. A., c/o British Antarctic Survey, Madingley Road, Cambridge CB3 0ET.
 RASMUSSEN, S. H., Møllevvej 6, Fløng, DK2640, Hedhusene, Denmark.
 REDFERN, C. P. F., B.SC., Dept. of Molecular Biology, University of Edinburgh, King's Buildings, Mayfield Road, Edinburgh EH9 3JR.
 ROZENDAAL, F. G., Prins Hendriklaan 58, 3721 AT Bilthoven, Netherlands.
 SAARI, C. L. V., Aasla, SF 21150 Roola, Finland.
 SMITH, N. G., D.PHIL., S.T.R.I., APO Miami 34002, U.S.A.
 SOMADIKARTA, Dr. S., Museum Zoologicum Bogoriense, Bogor, Indonesia.
 SPAANS, Dr. Arie L., c/o Research Institute for Nature Management, Kemperbergerweg 67, 6816 Arnhem, Netherlands.
 STEVENS, J. P., Dept. of Animal & Poultry Science, University of Saskatchewan, Saskatoon S7N 0W0, Canada.
 STRATFORD, R. T. J., 9 Beatrice Avenue, Keyham, Plymouth PL2 1NW.
 STUTTERHEIM, C. J., M.SC., Directorate of Nature Conservation, P/Bag 13306, Windhoek, 9100, S.W.A./Namibia.
 TIMMIS, W. H., Harewood Bird Garden, Harewood, Leeds LE17 9LF, W. Yorks.
 VIOLANI, Dr. C. G., Via S. Vittore 38/A, 20123 Milan, Italy.
 WATLING, R. J., B.SC., c/o National Westminster Bank Ltd., 64 High Street, Wallingford, Oxon OX10 0ST.
 WATSON, G. L., PH.D., Ulpha Post Office, Broughton-in-Furness, Cumbria LA20 6DX.

Death

The Committee much regrets to report the death of the following Member:-
 Captain COLLINGWOOD INGRAM.

Resignations

GOODALL, Mrs. A. L.; HAGMANN, Dr. J.; LUCEY, R. G.; PINE, Dr. R. S., SMITHERS, Dr. R. H. N.

Removed from Membership

BEALES, R. W.; CARINS, M.; COLLINS, J.; JACOBSEN, P. E.; LARSSON, L.; LAWSON, Dr. T. R.; LINDSEY, T. R.; MØLLER, A. P.; OWRE, Prof. O. T.

LIST OF AUTHORS AND CONTENTS

ACCOUNTS, 1980...	274
ANNUAL GENERAL MEETING	239, 273
ASH, J. S.	
Field description of the Obbia Lark <i>Calandrella obbiensis</i> , its breeding and distribution	379-383
A new race of the Scaly Babbler <i>Turdoides squamulatus</i> from Somalia	399-403
ASH, J. S. & COLSTON, P. R.	
A House x Somali Sparrow <i>Passer domesticus</i> x <i>P. castanopterus</i> hybrid	291-294
ASH, J. S. & MISKELL, J. E.	
Present abundance of the Warsangli Linnet <i>Acanthis johannis</i>	396-398
BAKER, ALLAN J.	
See RICHARDSON, DOROTHY M.	
BENSON, C. W.	
Ecological differences between the Grass Owl <i>Tyto capensis</i> and the Marsh Owl <i>Asio capensis</i>	372-376
BOOKS RECEIVED	272, 403-404

- BOSWELL, JEFFERY & DICKSON, WENDY
 Additions to a discography of bird sound from the Oriental zoogeographical
 region ... 313-318
- BOURNE, W. R. P. & DAVID, A. C. F.
 Nineteenth Century bird records from Tristan da Cunha ... 247-256
- BROOKE, M. de L.
 An illustrated address on the breeding of Manx Shearwaters on Skokholm and
 Skomer ... 273
- BROOKE, R. K. & CLANCEY, P. A.
 The authorship of the generic and specific names of the Bat Hawk ... 371-372
- BROWNE, P. W. P.
 Breeding of six Palaearctic birds in southwest Mauritania ... 306-310
- BRUN, BERTEL, MENDELSSOHN, HEINRICH & BULL, JOHN
 A new subspecies of Lappet-faced Vulture *Torgos tracheliotus* from the Negev
 Desert, Israel ... 244-247
- BULL, JOHN
 See BRUN
- CARDIFF, S. W. & REMSEN, J. V. Jr.
 Three bird species new to Bolivia ... 304-305
- CLANCEY, P. A.
 See BROOKE
- COLSTON, P. R.
 A newly described species of *Melignomon* (Indicatoridae) from Liberia, West
 Africa ... 289-291
 See also ASH
- COMMITTEE, REPORT OF FOR 1980 ... 239
- COWLES, GRAHAM S.
 The first evidence of Demoiselle Crane *Anthropoides virgo* and Pygmy
 Cormorant *Phalacrocorax pygmaeus* in Britain ... 383-386
- CRAMP, STANLEY
 An address on ornithology and conservation in Europe ... 240
- CUNNINGHAM-VAN SOMEREN, G. R.
 On the Type-locality of *Pogonocichla intensa* Sharpe, 1901 ... 377-378
- CUNNINGHAM-VAN SOMEREN, G. R. & SCHIFTER, HERBERT
 New races of montane birds from Kenya and southern Sudan 347-354, 355-363
- DAVID, A. C. F.
 See BOURNE
- DICKERMAN, R. W.
 Preliminary review of the Clay-coloured Robin *Turdus grayi* with redesignation
 of the type locality of the nominate form and description of a new
 subspecies ... 285-289
- DICKSON, WENDY
 See BOSWELL
- DOWSETT, R. J.
 Breeding and other observations on the Slaty Egret *Egretta vinaceigula* ... 323-327
- ELGOOD, J. H.
 An illustrated address on the birds of Nigeria ... 313
- FINLAYSON, J. C.
 The morphology of Sardinian Warblers *Sylvia melanocephala* and Blackcaps
S. atricapilla resident on Gibraltar ... 299-304

[illegible]

- PARKER, THEODORE A., III
 Distribution and biology of the White-checked Cotinga *Zaratornis stresemanni*,
 a high Andean frugivore 256-265
 See also O'NEILL
- PARKES, KENNETH C.
 A substitute name for a Philippine minivet (*Pericrocotus*) 370
- REMSSEN, J. V. Jr.
 See CARDIFF
- RICHARDSON, DOROTHY M. & BAKER, ALLAN J.
 Last record of the Cebu Island subspecies of the Orange-bellied Flower-
 pecker *Dicaeum trigonostigma pallidius* 275-276
- RICHARDSON P.
 See LIVERSIDGE
- SCHIFTER, HERBERT
 See CUNNINGHAM-VAN SOMMEREN
- SCHULENBERG, THOMAS S. & GRAHAM, GARY L.
 A new subspecies of *Anairetes agraphia* (Tyrannidae) from northern Peru ... 241-243
- SNOW, BARBARA K.
 Relationships between hermit hummingbirds and their food plants in eastern
 Ecuador 387-396
- SNOW, D. W. & LOUETTE M.
 Atlas of speciation in African Non-passerine Birds - *Addenda* and *Corrigenda* 2 336-339
- TURNER, D. A.
 A note on Bensch's Rail *Monias benschi* from Madagascar 240-241
- WALSH, J. FRANK
 Rotating behaviour of the incubating Yellow-bellied Fruit Pigeon *Treron*
waalia 311
- WALSH, J. FRANK & GRIMES, L. G.
 Observations on some Palearctic land birds in Ghana 327-334
- ZONFRILLO, B.
 Holarctic and Nearctic sandpipers 311-312

INDEX TO SCIENTIFIC NAMES

(Compiled by J. H. Elgood)

All generic and specific names (of birds only) are indexed. Subspecific names are included in general only if new and are indexed in bold print under the generic and the specific names. Some subspecies of special interest are included.

- abyssinica, Alcippe 352-353
— Coracias 338
— Zosterops 397
Abyssinicus, Turdus 348-350, 363, 377
— Turtur 337
Acanthis johannis 396-398
Accipiter nisus 336
— ovampensis 337
Acridotheres tristis 317, 387
Acrocephalus arundinaceus 333
— rufescens 333
— schoenobaenus 328, 332
— scirpaceus 328, 332
Actitis hypoleucos 387
— macularia 342
acuminata, Calidris 311
acunhae, Neospiza 247, 251, 254
acutirostris, Heteralocha 284
aedon, Troglodytes 282
Aegothales savasi 281
Aegyptius 244
Aegyptius monachus 246
aequatotialis, Apus 329
— Sheppardia 353-354
aequinoctialis, Procellaria 253
Aerodramus maximus 316
— vanikorensis 316
afer, Turtur 337
affine, Malacopteron 316
affinis, Apus 331
— Aythya 341
— Caprimulgus 317
— Hemignathus 283
Agelaius xanthomus 284
agilis, Anairetes 242-243
Aglaeactis, cupripennis 258
agraphia, Anairetes 241-243
Alaemon alaudipes 306-309
— hamertoni 383
alaudipes, Alaemon 306-309
alba, Egretta 340
— Tyto 317, 343, 375
albatrus, Diomedea 277
alberti, Crax 278
albicilla, Haliaeetus 278
albicollis, Turdus 365, 368
albifacies, Sceloglaux 281
albifrons, Pithys 368
— Sterna 383
albinucha, Columba 337
albugularis, Francolinus 337
albus, Porphyrio 279
alcinus, Machaerhamphus 371-372
— Macheiramphus 371-372
Alcippe abyssinica 352-353
Alcippe abyssinica loima *subsp. nov.* 353
— — *poliothorax* *subsp. nov.* 353
alcyon, Ceryle 343
Alethe poliocephala 351-352
Alethe poliocephala giloensis *subsp. nov.* 352
— — *nandensis* *subsp. nov.* 351
alexandrinus, Charadrius 306-307
Amauornis phoenicurus 387
Amazona brasiliensis 281
— guildingii 281
— imperialis 281
— leucocephala 342
— pretrei 281
— vittata 281
americana, Anas 341
— Fulica 341
— Grus 279
— Parula 344
americanus, Coccyzus 343
Ammomanes cincturus 310
Ampelion rubrocristata 258-260, 265
— rufaxilla 259
Anairetes agilis 242-243
— agraphia 242-243
Anairetes agraphia plengei *subsp. nov.* 242
Anairetes squamifera 242-243
Anas americana 341
— discors 341
— smithii 336
— sparsa 336
Anastomus oscitans 317
anatum, Falco 278
andicola, Grallaria 258
ani, Crotophaga 343
Anodorhynchus glaucus 280
Anorrhinus galeritus 316
Anous stolidus 251, 254
Anser indicus 315, 317
Anthornis melanura 283
Anthracoceros coronatus 316
— malabaricus 315, 317
Anthreptes pallidigaster 283

- Anthropoides virgo* 315, 383–384
Anthus campestris 331
 — *cervinus* 331
 — *melindae* 383
 — *novaeseelandiae* 398
 — *similis* 398
Anthus trivialis 331
antigone, *Grus* 315, 317
antisiensis, *Craniolucra* 258
apiaster, *Merops* 330
apivorus, *Pernis* 387
Aplonis fusca 284
Apus aequatorialis 329
 — *affinis* 331
 — *apus* 328, 329
 — *barbatus* 338
 — *melanotos* 338
 — *melba* 329
 — *niansae* 338
 — *pallidus* 328, 329, 338
 — *sladeniae* 338
apus, *Apus* 328, 329
Aquila rapax 315
aquila, *Eutoxeres* 388–395
Ara tinga 280
 — *tricolor* 280
araea, *Falco* 278
Arachnothera longirostris 317
Aratinga guarouba 280
arborea, *Dendrocycus* 278
arcuata, *Pipreola* 296
Ardea cinerea 387
 — *herodias* 340
 — *purpurea* 336
Ardeola grayii 387
 — *ibis* 364
ardesiaca, *Egretta* 323–326
Arenaria interpres 342
argentaurea, *Leiothrix* 316
argus, *Argusianus* 315, 316
Argusianus argus 315, 316
arquatrix, *Columba* 337, 397
Artamus leucorhynchus 284
arundinaceus, *Acrocephalus* 333
Asacornis scutalata 278
asiatica, *Zenaida* 342
asiaticus, *Caprimulgus* 317
Asio capensis 338, 372–375
 — *flammeus* 373
 — *hova* 375
assimilis, *Puffinus* 253, 254
Atelornis crossleyi 282
 — *pittoides* 282
atlantica, *Procellaria* 253
Atlapetes nationi 258
 — *rufigenis* 258
atra, *Pyriglena* 282
atrata, *Carduelis* 258
atricapilla, *Sylvia* 299–304
atroglaris, *Orthotomus* 316
aucklandica, *Coenocorypha* 279
 — *Nesonetta* 278
audouinii, *Larus* 279
aura, *Cathartes* 341
auratus, *Colaptes* 343
aureola, *Pipra* 270
 — *Rhipidura* 316
auriceps, *Cyanoramphus* 281
auricularis, *Heterophasia* 317
aurita, *Heliothrix* 366, 368, 390, 395
 — *Zenaida* 342
aurocapillus, *Seiurus* 345
australe, *Dicaeum* 276
australis, *Treron* 311
Avocettula recurvirostris 369
Aythya affinis 341
 — *collaris* 341

bailleui, *Loxioides* 284
bairdii, *Calidris* 312
 — *Paroreomyza* 284
bakkamoena, *Otus* 317
balaenarum, *Sterna* 279
Balearica pavonina 337
barbatus, *Apus* 338
Batrachostomus cornutus 317
 — *hodgsoni* 317
 — *javensis* 317
 — *septimus* 317
 — *stellatus* 317
benghalensis, *Rostratula* 337
bennettii, *Campethera* 339
benschi, *Monias* 240–241
bernieri, *Oriolia* 282
bicalcaratus, *Francolinus* 337, 339
bicolor, *Tachycineta* 343
bicornis, *Buceros* 315
bitorquatus, *Rhinoptilus* 279
Bleda syndactyla 358–359
Bleda syndactyla nandensis
 subsp. nov. 358

blythi, *Tragopogon* 278
blythii, *Onychognathus* 398
bollei, *Columba* 280
borbonicus, *Hypsipetes* 282
borealis, *Dendrocopos* 282
 — *Numenius* 279
bourbonnensis, *Terpsiphone* 283
bourcierii, *Phaethornis* 388–395
bouvieri, *Scotopelia* 338
braccatus, *Moho* 283
Brachypteracias leptosomus 282
 — *squamigera* 282
brachyurus, *Ramphocinclus* 282
brasilensis, *Amazona* 281
brevicaudata, *Camaroptera* 398
brevirostris, *Pericrocotus* 370
 — *Pterodroma* 249, 253
Bubulcus ibis 364
Buceros bicornis 315

- Buceros rhinoceros* 316, 317
bulweri, *Lobiophasis* 278
Buteo galapagoensis 278
 — *rufinus* 328
 — *solitarius* 278
Butorides striatus 387
 — *virescens* 340
- Cabalus, modestus* 279
caboti, *Tragopan* 278
Cacomantis merulinus 315
 — *variolus* 316
caerulea, *Egretta* 340
 — *Polioptila* 344
caeruleocapilla, *Pipra* 270
caerulescens, *Dendroica* 345
cafer, *Pycnonotus* 317
Calandrella obbiensis 379–383
Calidris acuminata 311
 — *bairdii* 312
 — *mauri* 312
 — *melanotus* 311
 — *minutilla* 342
 — *pusillus* 342
Callaeas cinerea 284
 — *wilsoni* 284
calvus, *Geronticus* 277
Calyptura cristata 282
Camaroptera brevicaudata 398
Campephilus imperialis 282
 — *principalis* 282
campestris, *Anthus* 331
Campethera bennettii 339
 — *nubica* 339
Camptorhynchus labradorius 278
Campylopterus largipennis 367
 — *villaviscencio* 388
canorus, *Cuculus* 329
 — *Garulax* 314–317
Capella gallinago 342
capensis, *Asio* 328, 372–375
 — *Turnagra* 283
 — *Tyto* 338, 372–375
capicola, *Streptopelia* 397
Caprimulgus affinis 317
 — *asiaticus* 317
 — *climacurus* 338
 — *indicus* 317
 — *macrurus* 317
 — *nigrescens* 366, 367
 — *pulchellus* 317
 — *rufigena* 338
carbo, *Phalacrocorax* 385
Carduelis atrata 258
 — *carduelis* 397
 — *chloris* 249
 — *crassirostris* 258
 — *cucullata* 284
 — *uropygialis* 258
carduelis, *Carduelis* 397
- caribbaea*, *Pterodroma* 277
carolinae, *Turdoides* 399
carolinensis, *Conuropsis* 280
 — *Dumetella* 343
carunculatus, *Creadion* 284
 — *Phalacrocorax* 277
caryophyllacea, *Rhodonessa* 278
cassidix, *Meliphaga* 283
cassini, *Falco* 278
castanopterus, *Passer* 291–293
Catharacta skua 254
Cathartes aura 341
Catreus wallichii 279, 315
caudifasciatus, *Tyrannus* 343
cayana, *Dacnis* 369
 — *Tangara* 369
cayanensis, *Leptodon* 320, 322
Centropus grillii 337
 — *monachus* 337
 — *senegalensis* 337
Cephalopterus penduliger 282
cervinus, *Anthus* 331
Ceryle alcyon 343
Chalcophaps indica 387
Chamaepetes goudotii 304–305
Charadrius alexandrinus 306–307
 — *pecuarius* 383
 — *semipalmatus* 342
 — *vociferus* 341
 — *wilsonia* 342
chathamensis, *Hemiphaga* 279
 — *Oriolus* 317
 — *Streptopelia* 317
chinensis, *Coturnix* 315
 — *Oriolus* 317
 — *Streptopelia* 317
Chiroxiphia 271
Chloephaga rubidiceps 277
Chloriotis nigriceps 279
chloris, *Carduelis* 249
 — *Halcyon* 317
chloromeros, *Pipra* 270
Chloropipo unicolor 271
chloropus, *Gallinula* 341
chlororhynchus, *Diomedea* 250, 253
Chlorospingus ophthalmicus 296–299
Chlorospingus ophthalmicus hiaticolus
 subsp. nov. 296
 — *semifuscus* 296–299
Chondrohierax uncinatus 318–322
chrysocome, *Eudypetes* 252
Chrysogaster, *Neophema* 281
Chrysuronia oenone 390, 393
Cichlherminia lherminieri 282
cincta, *Notiomystis* 283
cincturus, *Ammomanes* 310
cinerea, *Ardea* 387
 — *Calleas* 284
 — *Procellaria* 249, 253
cinereus, *Puffinus* 253–254

- cinnamomeiventris, *Myrmecocichla* 331
cinnamomina, *Halcyon* 282
Circus macrourus 328
Circus pygargus 328
Cissopsis leveriana 369
Cisticola eximia 332
Claravis godefrida 280
climacurus, *Caprimulgus* 338
coccinea, *Loxops* 284
Coccyzus americanus 343
 — *minor* 343
Coeligena prunellei 281
Coenocorypha aucklandica 279
 — *heugeli* 279
 — *pusilla* 279
Coereba flaviola 345
Colaptes auratus 343
collaris, *Aythya* 341
collybita, *Phylloscopus* 333
Columba albinucha 337
 — *arquatrix* 337, 397
 — *bollei* 280
 — *junoniae* 280
 — *jouyi* 280
 — *leucocephala* 342
 — *trocaz* 280
columbarius, *Falco* 341
Columbina passerina 342
comeri, *Gallinula* 251
concolor, *Falco* 268
condamini, *Eutoxeres* 305, 388–395
conirostris, *Indicator* 338
Contopus virens 343
Conuropsis carolinensis 280
Copsychus malabaricus 315, 316, 317
 — *luzoniensis* 316
 — *sularis* 316, 317
 — *sechellarum* 282
coqui, *Francolinus* 337
Coracias abyssinica 338
Coracina typica 282
Coracopsis nigra 281
Corapipo gutturalis 369
cornutus, *Batrachostomus* 317
 — *Eunymphicus* 281
coronata, *Dendroica* 345
 — *Pipra* 270
coronatus, *Anthracoceros* 316
 — *Vanellus* 383
corvina, *Terpsiphone* 283
Corvus enca 316
 — *macrorhynchus* 317
 — *ruficollis* 310
 — *splendens* 317
 — *tropicus* 284
Cossypha cyanocampter 355–356
Cossypha cyanocampter pallidiventris
 subsp. nov. 356
Cotinga maculata 282
Coturnix chinensis 315
Coturnix novaezelandiae 278
Coua delalandei 281
Cranioleuca antisimensis 258
crassirostris, *Carduelis* 258
 — *Vanellus* 337
 — *Vireo* 344
Crax alberti 278
 — *pinima* 278
Creadion carunculatus 284
cristata, *Calyptura* 282
 — *Lophotibis* 277
cristatus, *Pavo* 315, 317
 — *Podiceps* 336
crossleyi, *Atelornis* 282
Crossoptilon crossoptilon 278
 — *mantchuricum* 315
crossoptilon, *Crossoptilon* 278
Crotophaga ani 343
cruentata, *Pyrhura* 280
Crypturellus soui 365, 365
cucullata, *Carduelis* 284
cucullatus, *Raphus* 279
Cuculus canorus 329
 — *micropterus* 387
cupido, *Tympanuchus* 278
cupripennis, *Aglaeactis* 258
cursor, *Cursorius* 306–308, 383
Cursorius cursor 306–308, 383
cyanea, *Passerina* 346
Cyanerpes cyaneus 369
cyaneus, *Cyanerpes* 369
cyanocampter, *Cossypha* 355–356
Cyanoramphus auriceps 281
 — *malherbi* 281
 — *novaezelandiae* 281
 — *zealandicus* 281
Cygnus cygnus 266
 — *olor* 266
cygnus, *Cygnus* 266

Dacnis cayana 369
dauma, *Zoothera* 239
daurica, *Hirundo* 317
decaocto, *Streptopelia* 334–335
decipiens, *Streptopelia* 337
decurtata, *Fachysylvia* (= *Hylophilus*) 286
delalandei, *Coua* 281
Delichon urbica 330
demersus, *Spheniscus* 277
Dendrocitta formosae 315
Dendrocopos borealis 282
Dendrocoryna arborea 278
Dendroica caerulescens 345
 — *coronata* 345
 — *discolor* 345
 — *dominica* 344
 — *palmarum* 345
 — *petechia* 344
 — *tigrina* 344
 — *vitellina* 345

- Dendropicos elliotii* 338, 339
 — *goertae* 339
 — *poecilolaemus* 339
 — *pyrrhogaster* 339
derbianus, *Oreophasis* 278
Dicaeum 259
 — *australe* 276
 — *pallidus* 275–276
 — *trigonostigma* 275–276
Dicrurus macrocercus 315
Didunculus strigirostris 280
Diglossa spp. 395
Diomedea albatrus 277
 — *chlororhynchus* 250, 253
 — *exulans* 247, 250, 252
 — *melanophrys* 250
discolor, *Dendroica* 345
discors, *Anas* 341
dohnii, *Ramphodon* 281
dolei, *Palmeria* 283
Doliornis sclateri 265
domesticus, *Passer* 291–293
dominica, *Dendroica* 344
 — *Oxyura* 341
Doryfera johannae 388
Drepanoptila holosericea 279
Drepanorhynchus reichenowi 377
Dryocopus javensis 282
dubius, *Hieraaetus* 337
Ducula goliath 279
 — *whartoni* 279
Dumetella carolinensis 343
duvaucelli, *Harpactes* 316

Ectopistes migratoria 280
Egretta alba 340
 — *ardesiaca* 323–326
 — *caerulea* 340
 — *ibis* 340
 — *thula* 340
 — *tricolor* 340
 — *vinaceigula* 323–326
eisenbrauti, *Melignomon* 290–291
Elaenia 341
Eleania martinica 343
Elanoides forficatus 320, 321
Elanus leucurus 320, 322
elegans, *Otus* 317
elliotti, *Syrnaticus* 279
elliottii, *Dendropicos* 338, 339
emphanum, *Polyplectron* 279
enca, *Corvus* 316
episcopus, *Thraupis* 369
eremita, *Geronticus* 277
 — *Nesocichla* 247, 254
Eremopteryx nigriceps 383
erythronotus, *Myrmotherula* 282
erythrophthalma, *Netta* 336
erythroptera, *Stachyris* 316
Eudynamis scolopacea 316, 317, 387

Eudytes chrysocome 252
Eunymphicus cornutus 281
eupatria, *Psittacula* 281
Euphonia 259
Eurostopodus macrotis 317
 — *temminckii* 316, 317
Eutoxeres aquila 388–395
 — *condamini* 305, 388–395
excubitor, *Lanius* 306–309
exilis, *Ixobrychus* 340
eximia, *Cisticola* 332
exulans, *Diomedea* 247, 250, 252

falcinellus, *Plegadis* 341
Falco anatum 278
 — *araea* 278
 — *cassini* 278
 — *columbarius* 341
 — *concolor* 268–269
 — *peregrinus* 278
 — *punctatus* 278
 — *sparverius* 341
 — *subbuteo* 268–269, 328, 329
fasciicauda, *Pipra* 270
filicauda, *Pipra* 270
flammea, *Paroreomyza* 284
flammeus, *Asio* 373
 — *Pericrocotus* 370
flava, *Motacilla* 331
 — *Piranga* 369
flaveola, *Coereba* 345
flavicans, *Foudia* 284
flavipes, *Tringa* 311, 342
flavirostris, *Limnocorax* 374
Fluvicola pica 368
forficatus, *Elanoides* 320, 321
formosae, *Dendrocitta* 315
Forpus passerinus 367
Foudia flavicans 284
 — *sechellarum* 284
Francolinus albogularis 337
 — *bicalcaratus* 337, 339
 — *coqui* 337
 — *pondicerianus* 317
fraseri, *Oreomanes* 258
Fregata magnificens 340
Fregetta malanoleuca 249
 — *tropica* 249
fregetta, *Thalassidroma* 254
Fulica americana 341
fulvus, *Gyps* 246
furcata, *Thalaurania* 367, 390, 393
fusca, *Aplonis* 284
 — *Phoebeiria* 253
fuscatus, *Margarops* 363
 — *Turdus* 348–349

galapagoensis, *Buteo* 278
Galerida theklae 383
galeritus, *Anorrhinus* 316

- Gallicolumba rubescens* 280
gallinago, *Capella* 342
Gallinula chloropus 341
 — *comeri* 251
 — *nesiotis* 247, 254
Gallus gallus 314, 317, 387
gallus, *Gallus* 314, 317, 387
Garulax canorus 314, 316, 317
 — *leucolophus* 315
 — *mitratus* 316
Geopsittacus occidentalis 281
Geothlypis trichas 345
Geotrygon montana 364
Geronticus calvus 277
 — *eremita* 277
Gerygone igata 283
giganteus, *Macronectes* 253
giloensis, *Alethe* 352
glacialoides, *Procellaria* 254
Glaucis hirsuta 393, 394
glaucus, *Anodorhynchus* 280
godefrida, *Claravis* 280
goertae, *Dendropicos* 339
goliath, *Ducula* 279
goudotii, *Chamaepetes* 304–305
goughensis, *Rowettia* 251
Gracula religiosa 314, 315, 316
Grallaria andicola 258
 — *guatemalensis* 305
gravis, *Puffinus* 253
grayi, *Turdus* 285–289
grayii, *Ardeola* 387
grillii, *Centropus* 337
Grus americana 279
 — *antigone* 314, 315, 317
 — *leucogeranus* 316
 — *monacha* 315
guarouba, *Aratinga* 280
guatemalensis, *Grallaria* 305
guianensis, *Morphnus* 278
guildingii, *Amazona* 281
gularis, *Macronus* 316
gurneyi, *Pitta* 282
gutturalis, *Corapipo* 369
gymnocephalus, *Picathartes* 283
Gyps fulvus 246

habroptilus, *Strigops* 280
Haematopus ostralegus 279
Halcyon chloris 317
 — *cinnamomina* 282
 — *smyrnensis* 317
Haliaeetus albicilla 278
 — *leucogaster* 314, 315
haliaetus, *Pandion* 341
halli, *Macronectes* 253
hamertoni, *Alaemon* 383
hanapepe, *Hemignathus* 283
Harpactes duvaucelli 316
Harpyia harpyja 278

harpyja, *Harpyia* 278
harrisi, *Nannopterum* 277
hasitata, *Procellaria* 254
Heliochera 265
Heliothrix aurita 366, 368, 390, 395
Helmitheros vermivorus 344
Hemignathus affinis 283
 — *hanapepe* 283
 — *lucidus* 283
 — *obscurus* 283
 — *procerus* 283
 — *wilsoni* 283
Hemiphaga novaeseelandiae 279
 — *chathamensis* 279
henrici, *Megalaima* 316
herodias, *Ardea* 340
Heteralocha acutirostris 284
Heterophasia auricularis 317
heudei, *Paradoxornis* 283
heugeli, *Coenocorypha* 279
hiaticolus, *Chlorospingus* 296–299
Hieraaetus dubius 337
 — *pennatus* 328
Hierophasis swinhoei 278
Himantopus himantopus 279
 — *knudseni* 279
 — *mexicanus* 342
 — *novaezelandiae* 279
Hippolais pallida 310
 — *polyglotta* 328, 333
hirsuta, *Glaucis* 393, 394
hirtensis, *Troglodytes* 282
Hirundo daurica 317
 — *rustica* 330, 343, 387
hodgsoni, *Batrachostomus* 317
holosericea, *Drepanoptila* 279
hova, *Asio* 375
hypermetra, *Mirafraga* 383
Hyphanornis 251
hypoleucos, *Actitis* 387
Hypophilus decurtata 286
hypopyrrha, *Streptopelia* 337
hypostictus, *Taphrosipilus* 388
hypoxanthus, *Neodrepanis* 282
Hypsipetes borbonicus 282
 — *madagascariensis* 317
 — *olivaceus* 282

iagoensis, *Passer* 292
Ibis leucocephalus 317
ibis, *Ardeola* 364
 — *Bubulcus* 364
 — *Egretta* 340
Icteria virens 345
Ictinia mississippiensis 320
igata, *Gerygone* 283
impennis, *Pinguinus* 279
imperialis, *Amazona* 281
 — *Campephilus* 282
incerta, *Pterodroma* 253

- indica*, *Chalcophaps* 387
Indicator conirostris 338
 — *minor* 338
indicus, *Anser* 315, 317
 — *Caprimulgus* 317
 — *Vanellus* 317
insularis, *Otus* 281
intensa, *Pogonocichla* 377-378
intermedia, *Pipreola* 296
interprex, *Arenaria* 342
Irena puella 317
isidorei, *Pipra* 270
Ixobrychus exilis 340

jacutinga, *Pipile* 278
jamaicensis, *Leptoptila* 342
javensis, *Batrachostomus* 317
 — *Dryocopus* 282
jefferyi, *Pithecophaga* 278
jocosus, *Pycnonotus* 317
johannae, *Doryfera* 388
johannis, *Acanthis* 396-398
johnstoni, *Merula* 377
jouyi, *Columba* 280
jubaensis, *Turdoides* 399-402
jubatus, *Rhynchoceros* 279
junoniae, *Columba* 280

kakamegoes, *Necoccyphus* 357
Ketupa zeylonensis 317
kilgoris, *Spermophaga* 361
kona, *Loxioides* 284
knudseni, *Himantopus* 279
krameri, *Psittacula* 317

labradorius, *Campylorhynchus* 278
Lanius excubitor 306-309
lanyoni, *Turdus* 287
laperouse, *Megapodius* 278
largipennis, *Campylorhynchus* 367
Larus audouinii 279
leguati, *Necropsar* 284
Leiothrix argentauris 316
Leptasthenura pileata 258
 — *yanacensis* 258
Leptodon cayanensis 320, 322
leptosomus, *Brachypteryx* 282
Leptotila jamaicensis 342
 — *rufaxilla* 364
 — *verreauxi* 364
leucocephala, *Amazona* 342
 — *Columba* 342
 — *Turdoides* 399, 400
leucocephalus, *Ibis* 317
leucogaster, *Haliaeetus* 314, 315
 — *Sula* 340
leucogenys, *Pycnonotus* 317
leucogeranus, *Grus* 316
leucolophus, *Gracula* 315
Leucopeza semperi 283

leucophrys, *Ochthoeca* 258
leucoptera, *Pterodroma* 277
Leucopernis polionota 278
leucopterus, *Platysmurus* 316
leucopygius, *Turdoides* 401, 402
leucorhynchus, *Artamus* 284
leucorodia, *Platalea* 317
leucurus, *Elanus* 320, 322
 — *Threnetes* 388-395
leveriana, *Cissopis* 369
lherminieri, *Cichlherminia* 282
Limnocorax flavirostris 374
Lobiophasis bulweri 278
Locustella luscinioides 332
loima, *Alcippe* 353
longipes, *Xenicus* 282
longirostris, *Arachnothera* 317
longuemareus, *Phaethornis* 388-395
Lophiophasis bulweri 278
Lophotibis cristata 277
Loxioides bailleui 284
 — *kona* 284
 — *palmeri* 284
Loxops coccinea 284
 — *ochracea* 284
 — *rufa* 284
lucidus, *Hemignathus* 283
ludovicianus, *Pheucticus* 346
lugubris, *Surniculus* 316
Luscinia svecica 328, 331
luscinioides, *Locustella* 332
luteus, *Passer* 309
luzoniensis, *Copsychus* 316
lyalli, *Xenicus* 282

Machaerhamphus alcinus 371-372
Macheiramphus alcinus 371-372
Macrocephalon maleo 278
macrocerus, *Dicrurus* 315
Macronectes 247, 249, 253
 — *giganteus* 253
 — *halli* 253
Macronous gularis 316
macroptera, *Pterodroma* 253
macropterus, *Vanellus* 279
macrorhynchus, *Corvus* 317
macrootis, *Eurostopodus* 317
macrourus, *Circus* 328
macrurus, *Caprimulgus* 317
macularia, *Actitis* 342
maculata, *Cotinga* 282
 — *Paroreomyza* 284
 — *Stachyris* 316
madagascariensis, *Hypsipetes* 317
maderaspatisensis, *Motacilla* 317
magellanicus, *Scytalopus* 258
magicus, *Otus* 317
magister, *Vireo* 344
magnificens, *Fregata* 340
magnum, *Malacopteron* 316

- malabaricus, *Anthracceros* 315, 317
 — *Copsychus* 315
 malacensis, *Polyplectron* 316
Malacopteron affine 316
 — *magnum* 316
 maleo, *Macrocephalon* 278
 malherbi, *Cyanoramphus* 281
Manacus 271
manadensis, *Otus* 317
mantananensis, *Otus* 317
mantchuricum, *Crossoptilon* 315
mareensis, *Turdus* 283
Margarops fuscatus 363
marina, *Pelagodroma* 254
martinica, *Elaenia* 343
 — *Porphyrula* 341
mauri, *Calidris* 312
maximus, *Aerodramus* 316
 — *Thalasseus* 342
mayeri, *Nesoenas* 280
Megalaima henrici 316
 — *mystacophanos* 317
 — *oorti* 317
 — *rafflesi* 316
 — *zeylanica* 316
megalotis, *Otus* 317
Megapodius laperouse 278
Melanerpes superciliaris 343
melanocephala, *Sylvia* 299–304
melanocephalus, *Tragopan* 278
melanoleuca, *Fregetta* 249
 — *Tringa* 342
melanonotus, *Touit* 280
melanophrys, *Diomedea* 250
melanotos, *Calidris* 311–312
melanotus, *Apus* 338
melanura, *Anthornis* 283
melba, *Apus* 329
Melignomon 289
 — *eisentrauti* 290–291
 — *zenkeri* 290–291
melindae, *Anthus* 381, 383
Meliphaga cassidix 283
Melopyrhna nigra 346
mendozae, *Pomarea* 283
menstruus, *Pionus* 367
mentalis, *Pipra* 270
mentawi, *Otus* 317
Mergus octosetaceus 278
Merops apiaster 330
 — *viridis* 317
Merula johnstoni 377
merulinus, *Cacomantis* 315
Mesoenas unicolor 279
mesoleucus, *Troglodytes* 282
Metallura phoebe 258
Metabolus rugensis 283
mexicanus, *Himantopus* 342
meyeri, *Poicephalus* 337
micropterus, *Cuculus* 387
migrans, *Milvus* 317
migratoria, *Ectopistes* 280
Milvus migrans 317
Mimus polyglottos 343
minor, *Coccyzus* 343
 — *Indicator* 338
minutilla, *Calidris* 342
Mirafr hypermetra 383
 — *somalica* 383
mississippiensis, *Ictinia* 320
mitratus, *Garulax* 316
Mnioptila varia 344
mocino, *Pharomachrus* 281
modestus, *Cabalus* 279
Moho braccatus 283
 — *nobilis* 283
mollis, *Procellaria* 253
monacha, *Grus* 315
monachus, *Aegyptius* 246
 — *Centropus* 337
Monias benschi 240–241
montana, *Geotrygon* 364
 — *Paroemyza* 284
montanus, *Passer* 293
Monticola rufocinerea 397
 — *saxatilis* 331
 — *solitarius* 331
Morphnus guianensis 278
Motacilla flava 331
 — *maderaspatensis* 317
mwaki, *Turdus* 349–350
Myiarchus sagrae 343
Myrmecocichla cinnamomeiventris 331
Myrmotherula erythronotus 282
mystacophanos, *Megalaima* 317

nandensis, *Alethe* 351–352
 — *Bleda* 358
 — *Phyllastrephus* 360
Nannopterum harrisi 277
nationi, *Atlapetes* 258
naumanni, *Turdus* 363
Necropsar leguati 284
Nectarinia reichenowi 377
negevensis, *Torgos* 245
neglectus, *Pericrocotus* 370
Neocossyphus poensis 357–358
Neocossyphus poensis kakamegoes
 subsp. nov. 357
 — — *nigridorsalis subsp. nov.* 358
Neodrepanis hypoxanthus 282
Neophema chrysogaster 281
 — *pulchella* 281
 — *splendida* 281
nesiotis, *Gallinula* 247, 254
Nesochen sandvicensis 277
Nesocichla eremita 247, 254
Nesoclopeus poeciloptera 279
Nesoenas mayeri 280
Nesomimus trifasciatus 282

- Nesonetta aucklandica* 278
Nesospiza acunhae 247, 251, 254
Nestor productus 280
Netta erythrophthalma 336
ngurumanensis, *Phyllastrephus* 360
niansae, *Apus* 338
niger, *Quiscalus* 345
nigra, *Coracopsis* 281
— *Melopyrrha* 346
nigrescens, *Caprimulgus* 366, 367
nigriceps, *Chloriotis* 279
— *Eremopterix* 383
nigricollis, *Stachyris* 316
— *Turnix* 375
nigridorsalis, *Neocossyphus* 358
nigroluteus, *Pericrocotus* 370
nilotica, *Sterna* 306-308
Ninox novaeseelandiae 281
Nipponia nippon 277
nippon, *Nipponia* 277
nisus, *Accipiter* 336
nobilis, *Moho* 283
Notiomystis cincta 283
novaeseelandiae, *Anthus* 398
— *Hemiphaga* 279
— *Ninox* 281
— *Thinornis* 279
novaezelandiae, *Coturnix* 278
— *Cyanoramphus* 281
— *Himantopus* 279
noveboracensis, *Seiurus* 345
nubica, *Campethera* 339
nubicus, *Vultur* 244
Numenius borealis 279
— *phaeopus* 342, 387
Nyctanassa violacea 340

obbiensis, *Calandrella* 379-383
obscurus, *Hemignathus* 283
occidentalis, *Geopsittacus* 281
ochracea, *Loxops* 284
Ochthoeca leucophrys 258
— *oenanthoides* 258
— *rufipectoralis* 258
octosetaceus, *Mergus* 278
Odontriorchis palliatus 322
oenanthoides, *Ochthoeca* 258
oenone, *Chrysura* 390, 393
olivacea, *Tiaris* 346
olivaceus, *Hypsipetes* 282
— *Turdus* 396
Onychognathus blythii 398
oorti, *Megalaima* 317
Ophrysia supersiliosa 278
ophthalmus, *Chlorospingus* 294-299
Oriolia bernieri 282
Oriolus chinensis 317
— *xanthonotus* 316
— *xanthornus* 316
Oreomanes fraseri 258

Oreophasis derbianus 278
Orthotomus atrogularis 316
— *sericeus* 316
— *sutorius* 317
oscitans, *Anastomus* 317
ostralegus, *Haematopus* 279
Otus bakkamoena 317
— *elegans* 317
— *insularis* 281
— *magicus* 317
— *manadensis* 317
— *mantananensis* 317
— *megalotis* 317
— *mentawi* 317
— *rufescens* 317
— *silvicola* 317
— *spilocephalus* 317
— *sunia* 317
— *umbra* 317
ovampensis, *Accipiter* 337
Oxyura dominica 341

Pachyptila vittata 249, 253
pachyrhynchia, *Rhynchopsitta* 280
Pachysylvia decurtata 286
pacificus, *Pareudiastes* 279
palliatus, *Odontriorchis* 322
pallida, *Hippolais* 310
pallidiflava, *Pogonochla* 350-351
pallidigaster, *Anthreptes* 283
pallidigularis, *Sheppardia* 354
pallidius, *Dicaeum* 275-276
pallidiventris, *Cossypha* 355
pallidus, *Apus* 328, 329, 338
palmarum, *Dendroica* 345
— *Thraupis* 369
palmeri, *Loxioides* 284
— *Phaeornis* 282
— *Porzana* 279
Palmeria dolei 283
palustris, *Quiscalus* 284
Pandion haliaetus 341
paradisi, *Terpsiphone* 316
Paradoxornis heudei 283
Pareudiastes pacificus 279
parina, *Xenodacnis* 258
parkinsoni, *Procellaria* 277
Paroreomyza bairdii 284
— *flammea* 284
— *maculata* 284
— *montana* 284
Parula americana 344
Passer castanopterus 291-293
— *domesticus* 291-293
— *iagoensis* 292
— *luteus* 309
— *montanus* 293
— *simplex* 306-309
Passerculus sandwichensis 346
passerina, *Columbina* 342

Passerina cyanea 346
 passerinus, Forpus 367
 Pavo cristatus 315, 317
 pavonina, Balearica 337
 pecuarius, Charadrius 383
 Pelagodroma marina 254
 Pelecanoides urinatrix 254
 peli, Scotopelia 338
 pella, Topaza 367
 penduligera, Cephalopterus 282
 pennatus, Hieraaetus 328
 peregrinus, Falco 278
 Pericrocotus brevirostris 370
 — flammeus 370
Pericrocotus flammeus nigroluteus
 new name (*nomen novum*) 370
 Pericrocotus neglectus 370
 Pernis apivorus 387
 persa, Tauraco 337
 peruviana, Vini 280
 petechia, Dendroica 344
 Petroica traversi 283
 Pezoporus flaviventris 281
 — wallicus 281
 phaeopus, Numenius 342, 387
 Phaenornis palmeri 282
 Phaenicophaeus pyrrhocephalus 281
 Phaethornis bourcierii 388-395
 — longuemareus 388-395
 — ruber 394
 — superciliosus 388-395
 Phalacrocorax carbo 385
 — carunculatus 277
 — pygmaeus 383-385
 Pharomachrus mocino 281
 Pheuticus ludovicianus 346
 phoebe, Metallura 258
 Phoebeia fusca 253
 phoenicurus, Amaurornis 387
 Phyllastrephus cabanisi 359
 — fisheri 359
 — placidus 359-361
Phyllastrephus placidus nandensis
 subsp. nov. 360
 — — **ngurumanensis**
 subsp. nov. 360
 Phylloscopus collybita 333
 — sibilatrix 328, 333
 — trochilus 328, 333, 397
 — umbrovirens 397
 Phytotoma 265
 pica, Fluvicola 368
 Picathartes gymnocephalus 283
 Picoides (see Dendrocopos) 282
 picturata, Streptopelia 280
 pileata, Leptasthenura 258
 Pinguinus impennis 279
 pinima, Crax 278
 Pionus menstruus 367
 Pipile jacutinga 278

Pipra 270-271
 — aureola 270
 — caeruleocapilla 270
 — chloromeros 270
 — coronata 270
 — erythrocephala 270
 — fasciicauda 270
 — filicauda 270
 — isidorei 270
 — mentalis 270
 — pipra 270
 — rubrocapilla 270
 pipra, Pipra 270
 Pipreola arcuata 296
 — intermedia 295
 — pulchra 296
 — riefferii 294-296, 299
Pipreola riefferii tallmanorum
 subsp. nov. 294
 Piranga flava 369
 Pitheophaga jefferyi 278
 Pithys albifrons 368
 Pitta gurneyi 282
 pittoides, Atelornis 282
 placidus, Phyllastrephus 359-361
 Platea leucorodia 317
 Platysmurus leucopterus 316
 Plegadis falcinellus 341
 plengei, Anairetes 242
 plumbeus, Turdus 344
 Pluvialis squatarola 342
 Podiceps cristatus 336
 podiceps, Podilymbus 340
 Podilymbus podiceps 340
 poecilolaemus, Dendropicus 339
 poecilopectra, Nescolopeus 279
 poensis, Neocossyphus 357-358
 Pogoniulus pusillus 397
 Pogonocichla intensa 377-378
 — stellata 350-351, 377-378
Pogonocichla stellata pallidiflava
 subsp. nov. 350
 Poicephalus meyeri 337
 — senegalus 337
 poliocephala, Alethe 351-352
 poliocephalus, Turdus 282, 283
 polionota, Leucopternis 278
 Polioptila caerulea 344
 poliothorax, Alcippe 353
 polleni, Xenopirostris 282
 polyglotta, Hippolais 328, 333
 polyglottos, Mimus 343
 Polyplectron emphanum 279
 — malacensis 316
 Pomarea mendozae 283
 pondicerianus, Francolinus 317
 Popelairia popelairii 388
 popelairii, Popelairia 388
 porini, Turdus 363
 Porphyrio albus 279

- Porphyrio stanleyi 279
 Porphyryla martinica 341
 Porzanula palmeri 279
 pretrei, Amazona 281
 principalis, Campephilus 282
 pritzbueri, Turdus 282
 Procellaria aequinoctialis 253
 — atlantica 253
 — cinerea 249, 253
 — conspicillata 253
 — glacialoides 254
 — hasitata 254
 — mollis 253
 — parkinsoni 277
 procerus, Hemignathus 283
 Prodotoscus regulus 338
 productus, Nestor 280
 prunellei, Coeligena 281
 Psephotus pulcherrimus 281
 psittacea, Psittirostra 284
 Psittacula eupatria 281
 — krameri 317
 Psittirostra psittacea 284
 Pterocles senegallus 310
 Pterodroma brevirostris 249, 253
 — caribbaea 277
 — incerta 253
 — leucoptera 277
 — macroptera 253
 — pteropygia 277
 pteropygia, Pterodroma 277
 Ptilinopus roseicapilla 279
 — superbus 311
 puella, Irena 317
 Puffinus assimilis 253, 254
 — cinereus 253, 254
 — gravis 253
 — tenuirostris 271
 pulchella, Neophema 281
 pulchellus, Caprimulgus 317
 pulcherrimus, Psephotus 281
 pulchra, Pipreola 296
 punctatus, Falco 278
 purpurea, Ardea 336
 pusilla, Coenocorypha 279
 pusillus, Calidris 342
 — Pogoniulus 397
 Pycnonotus cafer 317
 — jacosus 317
 — leucogenys 317
 — sinensis 317
 — taivanus 317
 — zeylanicus 316
 pygargus, Circus 328
 pygmaeus, Phalacrocorax 383-385
 Pyriglena atra 282
 pyrrhocephalus, Phoenicophaeus 281
 pyrrhogaster, Dendropicos 339
 Pyrrhura cruentata 280
 Quiscalus niger 345
 — palustris 284
 rafflesii, Megalaima 316
 Ramphocinclus brachyurus 282
 Ramphodon dohrnii 281
 rapax, Aquila 315
 Raphus cucullatus 279
 — solitarius 279
 recurvirostris, Avocettula 369
 regulus, Prodotoscus 338
 reichenowi, Drepanorhynchus 377
 — Nectarinia 377
 religiosa, Gracula 314, 315, 316
 rhinoceros, Buceros 316
 Rhinoplax vigil 282
 Rhinoptilus bitorquatus 279
 Rhipidura aureola 316
 Rhodonessa caryophyllacea 278
 Rhynchopsitta pacyrhyncha 280
 Rhynochetos jubatus 279
 riefferii, Pipreola 294-299
 Riparia riparia 330
 riparia, Riparia 330
 risoria, Streptopelia 315, 335
 roseicapilla, Ptilinopus 279
 roseogrisea, Streptopelia 335
 rostrata, Streptopelia 280
 Rostratula benghalensis 337
 Rostrhamus sociabilis 318, 320
 Rowettia goughensis 251
 ruber, Phaethornis 294
 rubescens, Gallicolumba 280
 rubidiceps, Chloephaga 277
 rubrocapilla, Pipra 270
 rubrocristata, Ampelion 258
 ruckeri, Threnetes 393, 394
 rufa, Loxops 284
 rufaxilla, Ampelion 259
 — Leptoptila 364
 rufescens, Acrocephalus 333
 — Otus 317
 ruficapilla, Spermothaga 361-362
 ruficeps, Stachyris 316
 ruficollis, Corvus 310
 — Stelgidopteryx 343
 — Tachybaptus 336
 rufifrons, Stachyris 316
 rufigena, Caprimulgus 338
 rufigenis, Atlapetes 258
 rufinus, Buteo 328
 rufispectoralis, Ochthoeca 258
 rufocinerea, Monticola 397
 rugensis, Metabolus 283
 rustica, Hirundo 330, 343, 387
 rutililla, Setophaga 344, 345
 sagrae, Myiarchus 343
 sandvicensis, Nesochen 277
 sandwichensis, Passerculus 346

- satyra, Tragopan 315
 saularis, Copsychus 316, 317
 sawesi, Aegotheles 281
 saxatilis, Monticola 331
 Scelogaux albifacies 281
 schoenobaenus, Acrocephalus 328, 332
 scirpaceus, Acrocephalus 328, 332
 sclateri, Doliornis 265
 scolopacea, Eudynamis 316, 317, 387
 Scotopelia bouvieri 338
 — peli 338
 — ussheri 338
 scutulata, Asarcornis 278
 Scytalopus magellanicus 258
 sechellarum, Copsychus 282
 — Foudia 284
 Seiurus aurocapillus 345
 — noveboracensis 345
 semifuscus, Chlorospingus 296-299
 semipalmatus, Charadrius 342
 semitorquata, Streptopelia 337, 397
 semperi, Leucopoeza 283
 senegala, Tchagra 398
 senegalensis, Centropus 337
 senegallus, Pterocles 310
 senegalus, Poicephalus 337
 senex, Megapodius 278
 septimus, Batrachostomus 317
 sericeus, Orthotomus 316
 Serinus 382, 397
 Serinus tristriatus 397
 Setophaga ruticilla 344, 345
 Sheppardia aequatorialis 353-354
Sheppardia aequatorialis
 pallidigularis *subsp. nov.* 354
 sibilatrix, Phylloscopus 328, 333
 silvicola, Otus 317
 similis, Anthus 398
 simplex, Passer 306-309
 sinensis, Pycnonotus 317
 skua, Catharacta 254
 sladeniae, Apus 338
 smithii, Anas 336
 smyrnensis, Halcyon 317
 sociabilis, Rosthramus 318, 320
 solitaria, Tringa 342
 solitarius, Buteo 278
 — Monticola 331
 — Raphus 279
 somalica, Mirafra 383
 soui, Crypturellus 363, 365
 sparsa, Anas 336
 sparverius, Falco 341
 Spermophaga ruficapilla 361-362
Spermophaga ruficapilla kilgoris
 subsp. nov. 361
 Spheniscus demersus 277
 Sphyrapicus varius 343
 spilocephalus, Otus 317
 Spindalis zena 345
 splendens, Corvus 317
 splendida, Neophema 281
 squamigera, Anairetes 242
 squamigera, Brachypteracias 282
 squamulatus, Turdoides 399-402
 squatarola, Pluvialis 342
 Stachyris erythroptera 316
 — maculata 316
 — nigricollis 316
 — ruficeps 315
 — rufifrons 316
 stanleyi, Porphyrio 279
 Stelgidopteryx ruficollis 343
 stellata, Pogonochila 350-351, 377-378
 stellatus, Batrachostomus 317
 Sterna albifrons 383
 — balaenarum 279
 — nilotica 306-308
 — sumatrana 387
 — vittata 254
 stokesii, Xenicus 282
 stolidus, Anous 251, 254
 Streptopelia capicola 397
 — chinensis 317
 — decaocto 334-335
 — decipiens 337
 — hypopyrrha 337
 — picturata 280
 — risoria 315, 335
 — roseogrisea 335
 — rostrata 280
 — semitorquata 337, 397
 — turtur 329, 337
 stresemanni, Zaratornis 256, 257, 261, 264
 striatus, Butorides 387
 strigirostris, Didunculus 280
 Strigops habroptilus 280
 subbuteo, Falco 328, 329
 Sula leucogaster 340
 sumatrana, Sterna 387
 sunia, Otus 317
 superbus, Ptilinopus 311
 superciliaris, Melanerpes 343
 superciliosa, Ophrysia 278
 superciliosus, Phaethornis 388-395
 surda, Touit 280
 Surniculus lugubris 316
 sutorius, Orthotomus 317
 svecica, Luscinia 328, 331
 swinhoii, Hierophasis 278
 sylvestris, Tricholimnas 279
 Sylvia atricapilla 299-304
 — melanocephala 299-304
 syndactyla, Bleda 358-359
 Syrmaticus ellioti 279
 Tachybaptus ruficollis 336
 Tachycineta bicolor 343
 taivanus, Pycnonotus 317
 tallmanorum, Pipreola 294-295

- tanagra, Turnagra 283
 Tangara cayana 369
 Taphrospilus hypostictus 388
 Tauraco persa 337
 Tchagra senegala 398
 Tchitrea viridis 398
 Telecanthura ussheri 338
 temminckii, Eurostodopod 316, 317
 tenuirostris, Puffinus 271
 Terpsiphone bourbonnensis 283
 — corvina 283
 — paradisi 316
 Thalasseus maximus 342
 Thalassidroma fregetta 254
 Thalurania furcata 367, 390, 393
 thekla, Galerida 383
 Thinornis novaeseelandiae 279
 Thraupis episcopus 369
 — palmarum 369
 Threnetes leucurus 388-395
 — ruckeri 393, 394
 thula, Egretta 340
 Tiaris olivacea 346
 tigrina, Dendroica 344
 Topaza pella 367
 Torgos nubicus 244-245
 — tracheliotus 244-247, 336
Torgos tracheliotus negevensis
 subsp. nov. 245
 Touit melanotus 280
 — surda 280
 tracheliotus, Torgos 244-247, 336
 — Vultur 244
 Tragopan blythi 278
 — caboti 278
 — melanocephalus 278
 — satyra 315
 traversi, Petroica 283
 Treron australis 311
 — waalia 311
 trichas, Geothlypis 345
 Tricholimnas sylvestris 279
 tricolor, Ara 280
 — Egretta 340
 trifasciatus, Nesomimus 282
 trigonostigma, Dicaeum 275
 Tringa flavipes 311, 342
 — melanoleuca 342
 — solitaria 342
 tristis, Acridotheres 317, 387
 tristriatus, Serinus 397
 trivialis, Anthus 331
 trocaz, Columba 280
 trochilus, Phylloscopus 328, 397
 Troglodytes aedon 282
 — hirtensis 282
 — mesoleucos 282
 — troglodytes 282
 troglodytes, Troglodytes 282
 tropica, Fregetta 249
 tropicus, Corvus 284
 Turdoides jubaensis 399-402
 — leucocephala 399, 400
 — leucopygius 401, 402
 — squamulatus 399-402
Turdoides squamulatus carolinae
 subsp. nov. 399
 Turdus abyssinicus 348-350, 363, 377
Turdus abyssinicus fuscatus
 subsp. nov. 348
 — — **mwaki** *subsp. nov.* 349
 — — **porini** *nomen novum* 363
 Turdus albicollis 365, 368
 — grayi 285-289
Turdus grayi lanyoni *subsp. nov.* 287
 Turdus mareensis 283
 — naumanni 363
 — olivaceus 396
 — plumbeus 344
 — poliocephalus 282-283
 — pritzbueri 282
 — umbrinus 286-287
 — unicolor 317
 Turnagra capensis 283
 — tanagra 283
 Turnix nigricollis 375
 Turtur abyssinicus 337
 — afer 337
 turtur, Streptopelia 329, 337
 Tympanuchus cupido 278
 typica, Coracina 282
 Tyrannus caudifasciatus 343
 Tyto alba 317, 343, 375
 — capensis 338, 372-375
 ultramarina, Vini 280
 umbra, Otus 317
 umbrovirens, Phylloscopus 397
 uncinatus, Chondrohierax 318-322
 undulatus, Zebra 277
 unicolor, Chloropipo 271
 — Mesoenas 279
 — Turdus 317
 urbana, Delichon 330
 urinatrix, Pelecanoides 254
 uropygialis, Carduelis 258
 ussheri, Scotopelia 338
 — Telecanthura 338
 Vanellus coronatus 383
 — crassirostris 337
 — indicus 317
 — macropterus 279
 vanikorensis, Aerodramus 316
 varia, Mniotilta 344
 variolus, Cacomantis 316
 varius, Sphyrapicus 343
 vermivorus, Helminthophorus 344
 verreauxi, Leptotila 364
 vigil, Rhinoplax 282

villaviscencio, *Campylopterus* 383
 vinaceigula, *Egretta* 322-326
Vini peruviana 280
Vini ultramarina 280
 violacea, *Nyctanassa* 340
virens, *Contopus* 343
 — *Icteria* 345
Vireo crassirostris 344
 — *magister* 344
virescens, *Butorides* 340
virgo, *Anthropoides* 315, 383-384
viridis, *Merops* 317
 — *Tchitrea* 398
vitellina, *Dendroica* 345
vittata, *Amazona* 281
 — *Pachyptila* 249
 — *Sterna* 254
vociferus, *Charadrius* 341
Vultur nubicus 244
 — *tracheliotus* 244

waalia, *Treron* 311
wallichii, *Catreus* 279, 315
wallicus, *Pezoporus* 281
whartoni, *Ducula* 279
wilsoni, *Callaeas* 284
 — *Hemignathus* 283

wilsonia, *Charadrius* 342

xanthomus, *Agelaius* 284
xanthonotus, *Oriolus* 316
xanthornus, *Oriolus* 316
Xenicus longipes 282
 — *lyalli* 282
 — *stokesii* 282
Xenodacnis parina 258
Xenopirostris polleni 282

yanacensis, *Leptasthenura* 258

Zaratornis 256-265
 — *stresemanni* 256, 257, 261, 264
zealandicus, *Cyanoramphus* 281
Zebrilus undulatus 277
zena, *Spindalis* 345
Zenaida asiatica 342
 — *aurita* 342
zenkeri, *Melignomon* 290-291
zeylanica, *Megalaima* 316
zeylanicus, *Pycnonotus* 316
zeylonensis, *Ketupa* 317
Zoothera dauma 239
Zosterops 315
Zosterops abyssinica 397

ADDENDA AND CORRIGENDA

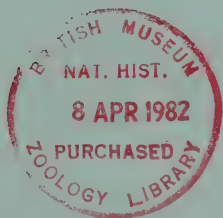
Bull. 101, 1981

- p. 240, line 32: 'K. F. BETTON', not 'K. BRETTON'
- p. 244, line 3: 'Bertel Bruun', not 'Bertel Brunn'
- p. 264, line 16: '*stresemanni*', not '*Stresemanni*'
- pp. 266-267, references to Plate on p. 262: 'Plate 2A a, b, c, d, e', not 'Plate 1 a, b, c, d, e'
- p. 268, line 21: 'See Plate 2B', not 'See Plates'
- p. 273, line 29 'J. G. PARKER', not 'J. B. PARKER'
- p. 280, line 3 from foot: '*melanonota*', not '*melanonotus*'
- p. 282, line 23: '*erythronotos*', not '*erythronotus*'
- p. 284, line 33: '*vide*', not '*fide*'
- p. 287, lines 15, 25: 'intergrades', not 'integrades'
- p. 316, line 3: '*Macronous*', not '*Macronus*'
- p. 316, line 8: '*temminckii*', not '*temmincki*'
- p. 328, line 39: '*rufinus*', not '*refinus*'
- p. 342, line 39: '*Leptotila*', not '*Leptoptila*'
- p. 347, line 4 of text: 'southeast', not 'southwest'
- p. 352, line 5 from foot: '*chyulu*', not 'chyulu'
- p. 375, line 18: add 'Chappuis (*Malimbus* 2, 1980: 15) lists a tape-recording.'
- p. 384, line 27: 'bones', not 'bhnes'

Bulletin of the
British Ornithologists' Club



Edited by
Dr. J. F. MONK



FORTHCOMING MEETINGS

The Meeting arranged for 13 January had unfortunately to be postponed: there was little time for Members to notify their intention to attend, as meeting notices had been delayed by causes beyond the Club's control, and then it became clear that a railway strike was going to cause the cancellation of British Railways' train services on the evening of the Meeting.

Fortunately it has been possible to re-arrange this Meeting, which will be held on 22 June, as described below, when Members will be able to hear Dr. Seller.

Tuesday, 18 May 1982 in the Senior Common Room, South Side, Imperial College, Prince's Gardens, S.W.7 at 6.30 p.m. for 7 p.m. **Mr. P. J. Conder, O.B.E.**, who has been in Pakistan in an advisory capacity for I.U.C.N./W.W.F., will speak on *Some Wetlands of Sind*. Those wishing to attend should send their acceptance with a cheque for £5.70 a person to the Hon. Secretary at 2 Chestnut Lane, Sevenoaks, Kent TN13 3AR (telephone Sevenoaks (0732 50313) to arrive not later than first post on Thursday, 13 May.

Tuesday, 22 June, 1982, at the same venue and time **Dr. T. J. Seller** of the Department of Zoology and Applied Entomology of Imperial College will speak *Are Bullfinches and Fruit Crops really incompatible?* Those wishing to attend should send their acceptance with a cheque for £5.70 a person to the Hon. Secretary (address above) to arrive not later than first post on Thursday, 17 June.

Tuesday, 20 July 1982 at the same venue and time **Mr. T. M. Gullick** who has lived in Spain for a number of years, will speak on *Birds in central Spain*. Those wishing to attend should send their acceptance with a cheque for £5.70 a person to the Hon. Treasurer at 53 Osterley Road, Isleworth, Middlesex TW7 4PW (telephone 01-560 1019) to arrive not later than first post on Thursday, 15 July.

Tuesday, 21 September 1982 at the same venue and time, **Dr. David Houston** will speak on *Vultures*. (This is a week earlier than the date announced in the *Bulletin* Vol. 101 No. 4.)

Volume 48 of the *Bulletin*, out of print for many years, has now been reproduced and copies are available: single numbers £2 each, index £4 with a special price of £20 for the whole volume.

Bulletin of the BRITISH ORNITHOLOGISTS' CLUB

Vol. 102 No. 1

Published: 26 March 1982

ANNUAL GENERAL MEETING

The 1982 Annual General Meeting of the British Ornithologists' Club will be held in the Senior Common Room, South Side, Imperial College, Prince's Gardens, London, S.W.7 at 6 p.m. on Tuesday, 18 May 1982.

AGENDA

1. Minutes of the last Annual General Meeting (*Bull. Brit. Orn. Cl.* 101: 273).
2. Report of the Committee and Accounts for 1981.
3. Election of Officers.
The Committee proposes that:-
 - (a) Mrs. Diana Bradley be re-elected Honorary Treasurer.
 - (b) Mr. R. E. F. Peal be re-elected Honorary Secretary.
 - (c) Mr. P. J. Conder, O.B.E., be elected a member of the Committee *vice* Mr. R. D. Chancellor, who retires by rotation and is ineligible for re-election.
4. Any other business of which notice shall have been given in accordance with Rule (7).

by order of the Committee,

RONALD E. F. PEAL

Honorary Secretary

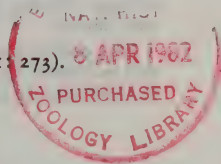
REPORT OF THE COMMITTEE FOR 1981

During 1981 new leaflets were produced with information about the Club and the *Bulletin* and were dispatched as inserts in other journals and by direct mail. It is pleasing to record that 60 new Members joined and that there were 47 new non-member subscribers to the *Bulletin*, the largest inflow in any year in the Club's history. Five Members resigned and nine were struck off under Rule (4). The Committee deeply regrets to report the death of Captain Collingwood Ingram, Member 1901-1981. At the end of the year there were 394 Members (U.K. 231, other countries 163) paid up to date and 194 non-member subscribers (U.K. 51, other countries 143).

Six Meetings were held during the year, all in the Senior Common Room, South Side, Imperial College. Attendances totalled 236, the highest average per Meeting for 19 years although the total did not reach those of the two preceding years, when greater numbers of Meetings were held.

In March, institutions were notified of the availability of *Bulletin* back numbers and sales of these rose appreciably. We are most grateful to Dr. Mervyn Ingram for the gift to the Club of Captain Collingwood Ingram's bound set of the *Bulletin* Vols. 1-45 and for loose copies of nearly all subsequent issues: the bound volumes contain many issues of which the Club held no copies and are especially appreciated. Captain Josias Cunningham, Senior, has very kindly given to the Club his copies of the whole of Vol. 48, filling the last gap in the Club's set of reference copies and we have pleasure in recording our thanks to him. We are much indebted to Dr. David Snow for continuing to undertake the work of handling the stock of *Bulletin* back numbers.

It has been possible in Volume 101 of the *Bulletin* successfully to overcome some of the backlog resulting from the priorities required by the centennial issue in March 1980, mainly as a result of a very satisfactory response to the effective sales promotion the Hon. Secretary has initiated, enabling the Club to afford more pages than were originally considered likely. One of the Editor's main aims is still to reduce the delay between the date a paper is received and its appearance in print.



Vol. 101 contained nearly 40 papers with a wide geographical coverage from South America to the Philippines, Tristan da Cunha to Israel and Egypt, U.S.A., the West Indies to West, South and East Africa, Madagascar and Mozambique. Including those involved in multiple authorship, the papers involved authors from the United Kingdom or U.K. expatriates (28), U.S.A. (20), South Africa (5), Canada (2), Belgium (2), Austria (1) and Israel (1), some being counted more than once.

It is not intended to continue the error perpetuated in Vol. 101 by which pagination was mistakenly continued direct from Vol. 100 (4) and then, necessarily, for the rest of the volume.

While the Editor was abroad from April to September, we were fortunate enough to be able to call upon the services of C. W. Benson, with his long experience of the *Bulletin*. We are most grateful to him for seeing the June and September issues into print and for editing with his usual expertise some of the papers in them as well as others submitted in that period.

The audited accounts for 1981 are not yet available but copies will be tabled at the A.G.M. and published in a later number of the *Bulletin*. Members wishing to see a copy before the A.G.M. should inform the Hon. Treasurer.

A major extension in distribution of the Stripe-backed *Prinia Prinia gracilis* in Somalia

by J. S. Ash

Received 6 May 1981

The Stripe-backed *Prinia Prinia gracilis* in Africa is known from 2 subspecies confined to the northeast of the continent. The nominate form is stated by White (1960) to enter "Sudan from Kerma to Khartoum in Nile Valley", and a darker race, *P. g. carlo*, along the "Red Sea coast from Red Sea province of Sudan to Zeyla on border of British Somaliland". Archer & Godman (1961) also indicate a coastal distribution for *carlo*, but extend its range eastwards in Somalia as far as Bulhar ($10^{\circ}24'N$, $44^{\circ}24'E$); and from the specimens—all coastal—plotted in Hall & Moreau (1970) the range is extended somewhat further east to c. $10^{\circ}27'N$, $45^{\circ}00'E$ near Berbera. The impression is given by these authors, and confirmed for Ethiopia by Urban & Brown (1971), that *carlo* has an entirely coastal distribution.

This restriction to a coastal habitat is not entirely true for Somalia, and definitely is not the case in Ethiopia (Fig. 1). In a journey in May 1979 with J. E. Miskell and A. A. Murshid along the northern coast of Somalia from Zeila ($11^{\circ}21'N$, $43^{\circ}28'E$) to Berbera ($10^{\circ}26'N$, $45^{\circ}02'E$), we found this species to be very common, particularly in the extensive *Suaeda* bush on the great flats behind the coastal dunes. However, inland of this zone the species was also common, particularly in Tamarisk scrub in the dry wadis, even up to 35 km inland, such as at Geriad ($10^{\circ}55'N$, $43^{\circ}22'E$) at 75 km south of Zeila on the track from Borama ($09^{\circ}56'N$, $43^{\circ}11'E$). We also found it to be fairly common on Aibat ($11^{\circ}31'N$, $43^{\circ}27'E$), the most distant of the islands in the Gulf of Aden off Zeila.

In Ethiopia this *prinia* occurs much further inland. Between Aseita ($11^{\circ}34'N$, $41^{\circ}27'E$) and Tendaho ($11^{\circ}40'N$, $40^{\circ}57'E$) along the Awash River in the Danakil desert, I found it in several years in the period 1970-1977, particularly in dense Tamarisk woodland, but also along the irrigation channels at Tendaho. Tendaho is 200 km from the nearest sea, but to the

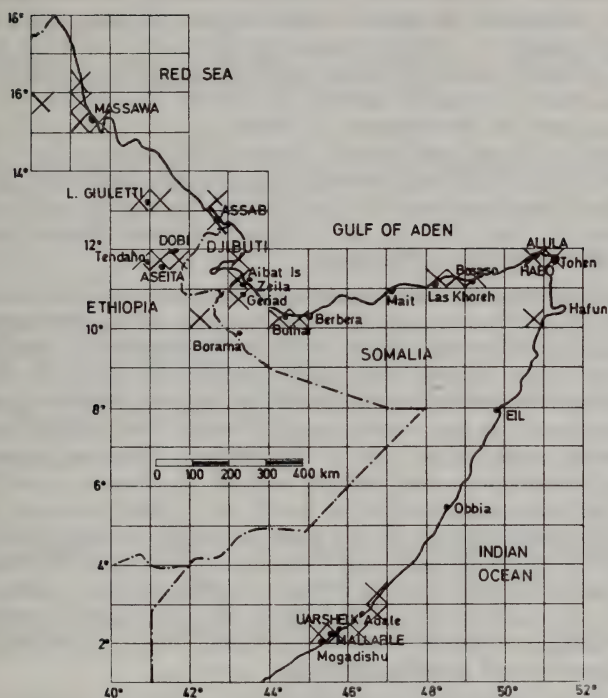


Fig. 1. The distribution by $\frac{1}{2}^\circ$ squares of the Stripe-backed Prinia *Prinia gracilis* in Ethiopia, Djibouti and Somalia. X = recorded in the respective $\frac{1}{2}^\circ$ square. (Drawing by Alain Peeters).

south and west of there the species is unknown. However, to the north and nearer to the coast, Dr. D. Summers-Smith (*in litt.* 11 Nov 1972) reported it from Lake Giuletti ($13^\circ 15'N$, $41^\circ 00'E$) in 1972, and to the east I found the birds in 3 years actually below sea level in the Dobi depression ($11^\circ 53'N$, $41^\circ 42'E$). On the Red Sea coast it occurs in a variety of coastal vegetation, including young mangroves. It was common around Djibouti ($11^\circ 35'N$, $43^\circ 09'E$) when I was there in December 1975.

In 1978 I first found Stripe-backed Prinias on 3 November in a narrow belt of *Atriplex* growing on beach-head dunes in the Mallable area ($02^\circ 12'N$, $45^\circ 38'E$) at 35 km northeast of Mogadishu in southern Somalia. Since then I have searched many kilometres of coastline from 45 km northeast of Uarsheik ($02^\circ 18'N$, $45^\circ 49'E$) to Kismayu ($00^\circ 22'S$, $42^\circ 33'E$) and beyond and found this prinia only at the northern end of this stretch of coast, at 6 sites which are (Fig. 1.), from north to south:—30 km northeast of Uarsheiki (=Uarsciek) ($02^\circ 26'N$, $46^\circ 02'E$); 14 km northeast of Uarsheik ($02^\circ 22'N$, $45^\circ 45'E$); Mallable area; 20 km northeast of Mogadishu ($02^\circ 08'N$, $45^\circ 31'E$); 14 km north of Mogadishu ($02^\circ 07'N$, $45^\circ 29'E$); Mogadishu airport ($02^\circ 02'N$, $45^\circ 19'E$).

During another journey with J. E. Miskell along parts of the east coast and eastern section of the north coast in April and May 1980, several *P. gracilis* were present in *Atriplex* at 42 km (03°00'N, 46°36'E) and 49 km (03°05'N, 46°42'E) north of Adale, and another at Hafun Bay (10°18'N, 50°53'E) in coastal Tamarisk. Around the "Horn" the species was common in low mangrove in the lagoons at Habo (11°47'N, 50°32'E) and Alula (11°58'N, 50°15'E), and also in wadi Tamarisk at Tohen (11°44'N, 51°15'E). Along the north coast it was common to abundant in coastal Tamarisk at the mouth of the Garas wadi (11°17'N, 49°02'E), and at 29 km (11°17'N, 48°25'E) and 83 km (11°15'N, 48°52'E) east of and also at Las Khoreh (11°09'N, 48°11'E), also in Tamarisk.

The newly found southern population is confined to a 200 km stretch of coastline northeast from Mogadishu, but there are only a few sites along this coast where the habitat is suitable, if indeed the species is restricted, as it seems to be, to the *Atriplex* there. The new records along the north coast and extending down the east coast to Hafun suggest that the species will in fact be found more or less continuously all round the Somalia coast where suitable habitat exists from Zeila to Mogadishu. There are, however, long stretches of unsuitable coastal habitat, such as the extensive sea-cliffs in the north and the bare sand dunes further south, and I failed to see any in a search of 16 km of suitable habitat on the coast and wadis around Mait (10°58'N, 47°04'E) in the north in May 1979, and none on the east coast around Obbia (05°21'N, 48°33'E) and Eil (07°58'N, 49°49'E) in April 1980. South of Mogadishu, its presence may be less likely, for the range of several species ceases in this area (notably that of 3 endemic larks, *Calandrella obbiensis*, *Alaemon hamertoni* and *Mirafraga somalica*).

The southern population is separated by 1000 km of coastline from the nearest north Somalia birds, suggesting that there might be a taxonomic difference between the two. However, 2 fresh specimens from Zeila in May do not differ from Mallable birds.

Mackworth-Praed & Grant (1960) state that *carlo* breeds in July on the coast of Sudan; in Ethiopia eggs are laid in all months from December to May (Urban & Brown 1971), and I saw birds building at the end of December at Massawa. Nothing is known about the breeding season of *P. gracilis* in the north of Somalia, but in the Mogadishu area 3 pairs laid in December and one in May. The nests were a loose untidy dome of rootlets and dry *Cymodocea*, firmly lined with a thick cup of felted seed-heads of an *Aerva* sp., placed 30-60 cm up in *Atriplex* bushes in sites sheltered from the strong wind. No eggs have been seen, but broods of young numbered 2, 3, 3 and 4.

Prinias may be difficult to find during periods of strong monsoon winds, for they then remain low in thick cover. There is some suggestion of local movement, for at 2 sites which I had searched twice previously without seeing any, I found what were apparently new arrivals in March and April. At the first site, on a day of light wind, there were 2 birds flying above the beach at 6-10 m heading into the breeze. Every now and then they dropped into *Atriplex* bushes where they called excitedly before taking off again. Possibly the birds from Mogadishu in February and March were wanderers from slightly further north. In these various local populations, worthwhile further investigation could be made into their choice of habitat, namely the

inland association with *Tamarix*, the coastal association in the north with *Suaeda*, *Tamarix* and mangrove and with *Atriplex* in the south.

Acknowledgements: I thank Mrs. M. Jaeger, J. E. Miskell, A. A. Murshid and J. Mwaki for their help in capturing birds and preparing specimens, and my wife for the identification of plants.

References:

- Archer, G. & Godman, E. M. 1961. *The Birds of British Somaliland and the Gulf of Aden*. Edinburgh & London: Oliver & Boyd.
- Hall, B. P. & Moreau, R. E. 1970. *An Atlas of Speciation in African Passerine Birds*. London: British Museum (Nat. Hist.).
- Mackworth-Praed, C. W. & Grant, C. H. B. 1960. *Birds of Eastern and North Eastern Africa*. London: Longmans.
- Urban, E. K. & Brown, L. H. 1971. *A Checklist of the Birds of Ethiopia*. Addis Ababa: Haile Sallassie I University.
- White, C. M. N. 1960. A checklist of the Ethiopian Muscicapidae (Sylviinae) Part 1. *Occ. Pap. Nat. Mus. Southern Rhod.* 3 (24B): 399-430.

Address: Dr. J. S. Ash, Division of Birds, National Museum of Natural History, Smithsonian Institution, Washington, D.C. 20560, U.S.A.

© British Ornithologists' Club 1982.

First Zambian records of Chestnut-banded Sandplover *Charadrius pallidus* and observations of White-fronted Sandplover *C. marginatus* and Cape Teal *Anas capensis* at the same locality

by P. B. Taylor

Received 6 June 1981

CHARADRIUS PALLIDUS

On 23 August 1980 I found a Chestnut-banded Sandplover *C. pallidus* feeding alongside Kittlitz's Sandpipers *C. pecuarius* at the margin of a permanent pool at Akatiti Dam, an inactive mine tailings dam at Luanshya, Zambia (13°10'S, 28°24'E). The pool is in an area of bare sand and its margins have very little fringing vegetation: during the dry season of 1980 the area contained breeding *C. pecuarius* and a few feeding *C. marginatus*.

The *C. pallidus* was easily visible because of its very pale upperparts, whereas the darker *C. pecuarius* were difficult to see against the wet sand. I observed the bird at distances down to 15 metres, and after feeding it sat on damp sand and dozed. Its head appeared larger and broader than that of *C. pecuarius*, although both species were about the same in body size. Above, it was very pale, plain grey with only a slight brownish tinge. The head pattern was distinctive: forecrown to nape pale grey, forehead and face white with a broad white stripe over the eye. There was a narrow dark smudge behind the eye, and dark colouring on the lores not extending to the base of the bill. Below, the bird was white with a complete and well-defined narrow brown band across the base of the neck merging at the sides with the grey of the upperparts. The bill was black, distinctly shorter and finer than the bills of *C. pecuarius* or *C. marginatus*, the legs were greenish-grey,

and the bird stood shorter than *C. pecuarius* with a rather furtive stance. The flight feathers on the open wing were darker than the upperparts and there was a diffuse pale bar on the primaries extending to the secondaries. The tail had very white sides and a dark centre. Flight calls were "chip" and "pip".

I failed to relocate the bird later that day but I observed several *C. marginatus* at local tailings dams and noted that these birds were very gingery brown above and often had a rich buff wash on the underparts.

I concluded that the bird was possibly of the southern race *pallidus*. I had previously seen the East African race *venustus* in Kenya and I recollected it as smaller and darker above than the Luanshya bird. P. L. Britton and A. J. Tree have seen my description and sketch of the bird and agree (*in litt.*) that the southern race is more likely.

Despite regular visits to the Luanshya tailings dams I did not see this species again until 13 September 1980, when I found a single bird feeding at the Akatiti pool. I obtained excellent views at very close range. The bird was very similar in appearance to the August bird but the legs seemed darker grey-green, the breastband was brighter rufous brown and there was a rufous brown line running from the dark patch behind the eye down the side of the head and neck between the grey upperparts and the white underparts. This line did not reach the ends of the breastband. Otherwise the head pattern was as previously described. *C. pecuarius*, *C. marginatus* and Ringed Plover *C. hiaticula* were present for comparison. Later that day the bird had gone and despite numerous visits to tailings dams in the area I failed to record this species again.

An examination of skins at the British Museum of Natural History, Tring, has satisfied me that the Luanshya records were of *C. pallidus pallidus*. Full details of the sightings are on file at Tring. Identification of small plovers is often difficult but in my opinion the only species with which these Luanshya birds could have been confused is *C. marginatus* and R. J. Dowsett (*in litt.*) mentions that he has seen *C. marginatus* with a rich buff pectoral band in Nigeria. I have seen many *C. marginatus* with richly-coloured underparts and at least one bird with a distinct brown breastband at Luanshya. My observations suggest, however, that such well-marked *C. marginatus* are also very richly-coloured above and are thus easily distinguishable from *C. pallidus*. This impression is supported by my examination of *C. marginatus* skins at Tring, where adults and immatures with richly-coloured underparts were also richly-coloured above.

C. pallidus is typically found by saline lakes and pans and occasionally on the seashore (Snow 1978), and has not previously been recorded from Zambia, where such habitat does not exist. A. J. Tree (*in litt.*) suggests that Zambian birds would most probably have wandered from the nearest breeding area, in Botswana, and it is possible that adverse conditions in areas of southwestern Africa could have prompted some individuals to wander. That it can wander is also shown by a record from the Victoria Falls on 14 Oct. 1979 (Pollard 1980). The tailings dams in Zambia's Copperbelt Province have shallow pools and large expanses of open sand and mud, and are perhaps the most likely habitat in Zambia to be temporarily attractive to this species, although the water is not saline.

ANAS CAPENSIS

At the time of my second sighting of *C. pallidus* I found three Cape Teal *A. capensis* at Akatiti in a flock of 200 Red-billed Teal *A. erythrorhynchos*. Although there is no information on possible movements of *A. capensis* in Zambia (Benson *et al.* 1971), it is perhaps an irregular wanderer from drier southern African areas (Benson *et al.* 1971) and this record is the most northerly one for Zambia, lending further support to the suggestion of unusually long-range movements of birds from southern areas at this time. R. J. Dowsett (*in litt.*) confirms that previous records of *A. capensis* from Copperbelt and Northern Provinces (Benson & White 1957) were found to be incorrect (Benson *et al.* 1970) and were therefore excluded from Benson *et al.* (1971), although they were reinstated (incorrectly) by Winterbottom (1974). In recent years this duck has occurred in Zambia only as far north as Lusaka, some 300 km south of Luanshya (D. R. Aspinwall in *Zambian Ornithological Society Newsletters*, Jul-Oct 1977 and May-June 1980).

CHARADRIUS MARGINATUS

During the dry season of 1980 the Luanshya tailings dams seemed to be particularly attractive to *C. marginatus* and R. J. Casalis de Pury and I noted larger numbers of these birds than in previous years. We also found this species breeding at one locality (adult with a small downy chick on 19 July and adult with a small downy chick on 23 and 26 August). I can trace no other breeding records from Copperbelt Province, an area outside this bird's usual range in Zambia (Benson *et al.* 1971). Observer coverage of the dams was more extensive and frequent in 1980 than in previous years, so it is not clear whether our observations reflect unusually good numbers or whether this species has been overlooked in the past, but these birds were certainly widespread in suitable habitat at Luanshya in 1980. None of the *C. marginatus* which I have seen at Luanshya could be attributed to the extreme southern African race *marginatus* on the basis of plumage characters given by White (1965).

Acknowledgements: I am grateful to A. J. Tree for his comments on an earlier draft of this note.

References:

- Benson, C. W., Brooke, R. K., Dowsett, R. J. & Irwin, M. P. S. 1970. Notes on the birds of Zambia. *Arnoldia* 40: 1-59.
 — — — 1971. *The Birds of Zambia*. London: Collins.
 Benson, C. W. & White, C. M. N. 1957. *Checklist of the Birds of Northern Rhodesia*. Lusaka: Government Printer.
 Pollard, C. J. W. 1980. A visual record of Chestnut-banded Sandplover at the Victoria Falls. *Honeyguide* 102: 37.
 Snow, D. W. (Ed.) 1978. *An Atlas of Speciation in African Non-passerine Birds*. London: British Museum (Nat. Hist.).
 Snow, D. W. 1979. Atlas of speciation in African non-passerine birds—*addenda and corrigenda*. *Bull. Brit. Orn. Cl.* 99: 66.
 White, C. M. N. 1965. *A Revised Checklist of African Non-Passerine Birds*. Lusaka: Government Printer.
 Winterbottom, J. M. 1974. The Cape Teal. *Ostrich* 45: 110-132.

Address: P. B. Taylor, P.O. Box 25138, Nairobi, Kenya.

The distribution of fused phalanges of the inner toe in the Accipitridae

by Storrs L. Olson

Received 6 June 1981

In certain members of the Accipitridae, the basal phalanges (1 and 2) of the inner toe (digit II) are fused to form a single functional unit. Although this condition has in the past been considered to have taxonomic significance, I have found that all the literature concerning the distribution of this character is either incomplete or inaccurate. As this appears to be a uniquely derived character that can perhaps be used to define a small, monophyletic group within the large and diverse family of hawks and eagles, it is of particular value because the intrafamilial systematics of the Accipitridae have been very poorly documented. Therefore, I conducted a comprehensive survey of the osteology of the bones of the inner toe in the Accipitridae in order to determine more precisely which taxa possess the fused condition of the phalanges.

MATERIAL EXAMINED

Most of the specimens I examined were skeletons in the collections of the National Museum of Natural History, Smithsonian Institution, Washington, D.C., and the American Museum of Natural History, New York. These were augmented by selected specimens from the Museum of Zoology, University of Michigan, Ann Arbor, and the Museum of Vertebrate Zoology, University of California, Berkeley. The sequence used below is that of Morony, Bock & Farrand (1975).

The following taxa were found to have the fused condition of the basal phalanges of the inner toe (number of individuals examined in parentheses): *Ictinia plumbea* (7), *I. mississippiensis* (1), *Milvus migrans* (16), *Haliaeetus spheurnurus* (1), *H. indus* (6), *Haliaeetus leucogaster* (4), *H. vocifer* (4), *H. leucocephalus* (34), *H. albicilla* (3), *H. pelagicus* (3), *Ichthyophaga nana* (= *humilis*) (1), *I. ichthyaeus* (1), *Busarellus nigricollis* (7—of which the phalanges were unfused in 1 specimen).

I examined at least one skeleton of each of the following species of Accipitridae in which the phalanges were not fused. *Aviceda cuculoides*, *Leptodon cayanensis*, *Chondrohierax uncinatus*, *Henicopernis longicauda* (phalanges dissected from alcoholic specimen), *Pernis apivorus*, *Elanoides forficatus*, *Macbaerhamphus alcinus*, *Gampsonyx swainsonii*, *Elanus leucurus*, *E. caeruleus*, *Chelictinia riocourii* (phalanges taken from skin), *Rostrhamus sociabilis*, *Harpagus bidentatus*, *Lophoctinia isura*, *Hamirostra melanosternon*, *Gypobierax angolensis*, *Neophron percnopterus*, *Gypaetus barbatus*, *Necrocyrtes monachus*, *Gyps bengalensis*, *G. africanus*, *G. rueppellii*, *G. himalayensis*, *G. fulvus*, *Torgos tracheliotus*, *Sarcogyps calvus*, *Aegyptius monachus*, *Trigonoceps occipitalis*, *Circus cinereus*, *C. cinereus*, *Terathopius ecaudatus*, *Spilornis cheela*, *Polyboroides typus*, *Geranoospiza caerulescens*, *Circus cyaneus*, *C. cinereus*, *C. pygargus*, *C. melanoleucus*, *Melierax metabates*, *M. canorus*, *M. gabar*, *Accipiter gentilis*, *A. melanoleucus*, *A. nisus*, *A. striatus*, *A. erythronemius*, *A. fasciatus*, *A. brevipes*, *A. badius*, *A. cooperii*, *A. bicolor*, *Urotriorchis macrourus*, *Butastur indicus*, *Kaupifalco monogrammicus*, *Leucopternis melanops*, *L. albicollis*, *Buteogallus anthracinus*, *B. urubitinga*, *Heterospizias meridionalis*, *Geranoaetus melanoleucus*, *Parabuteo unicinctus*, *Buteo nitidus*, *B. magnirostris*, *B. ridgwayi*, *B. lineatus*, *B. platypterus*, *B. swainsonii*, *B. galapagoensis*, *B. albicaudatus*, *B. polyosoma*, *B. poecilochrous*, *B. jamaicensis*, *B. buteo*, *B. lagopus*, *B. rufinus*, *B. hemilasius*, *B. regalis*, *B. auguralis*, *B. rufoscutus*, *Morphnus guianensis*, *Harpia barpygia*, *Pithecopbaga jefferyi*, *Ictinaetus malayensis* (phalanges taken from skin), *Aquila pomarina*, *A. rapax*, *A. wahlbergi*, *A. gurneyi*, *A. chrysaetos*, *A. audax*, *A. verreauxii*, *Hieraetus fasciatus*, *Spizastur melanoleucus*, *Lophoaetus occipitalis*, *Spizastur*

(*cirrhatus*) *limnaeetus*, *S. nipalensis*, *S. tyrannus*, *S. ornatus*, *Stephanoaetus coronatus*, *Polemaetus bellicosus*.

There is also no fusion of phalanges in the Osprey *Pandion haliaetus* (Pandionidae).

The only genera for which no specimens of phalanges were available were *Dryotriorchis*, *Eutriorchis*, *Megatriorchis*, *Erythrotriorchis*, *Harpyhaliaetus*, *Harpyopsis* and *Oroaetus*. Of these, *Megatriorchis* and *Erythrotriorchis* have been suggested as being congeneric with *Accipiter* by Amadon (1978). None of the others has been suggested to be closely related to genera in which the phalanges are known to be fused.

DISCUSSION

Shufeldt (1895) was the first to note the fused condition of the basal phalanges of digit II in the Accipitridae, reporting its occurrence in *Ictinia mississippiensis* and *Haliaeetus leucocephalus*. Friedmann (1950), doubtless following manuscript notes left by Ridgway, gave phalangeal fusion as a characteristic of his subfamily Milvinae or "true kites". Within the scope of that work, the only genera included in the Milvinae were *Harpagus*, *Ictinia*, and *Rostrhamus*. However, the phalanges are not fused in either *Harpagus* or *Rostrhamus*, whereas they are fused in *Haliaeetus*, a genus that Friedmann included in his Buteoninae. Brown & Amadon (1968: 20) essentially followed Friedmann and compounded the errors by stating that the fusion took place in the phalanges of the middle toe, rather than the inner toe, as is actually the case. The genera that they implied as possessing fused phalanges were *Rostrhamus*, *Harpagus*, *Ictinia*, *Lophoictinia*, *Hamirostra*, *Milvus*, and *Haliastur*, as well as the genera *Haliaeetus* and *Ichthyophaga*. Although Brown & Amadon did not employ formal designations for their subdivisions of the Accipitridae, they considered the first group of genera to be a subgroup of the "kites", whereas the last two genera were deemed to represent a different group, the "fish eagles". As seen in the list of materials above, 4 of the genera in their milvine subgroup of kites do not possess fused phalanges. In his treatment of morphology of the Falconiformes, Jollie (1977: 28) stated that "of the feet examined only those of *Milvus*, *Ictinia*, *Haliaeetus*, and *Ichthyophaga* showed fusion . . . The fusion in *Haliaeetus* may be incomplete with only the under surface involved, whereas the joint appears more or less normal above." These observations are correct as far as they go, the omissions being *Haliastur* and *Busarellus*.

Deferring discussion of *Busarellus* (below), the genera that actually do have fused phalanges are all presently considered to be fairly closely related. The sequence *Ictinia*, *Lophoictinia*, *Hamirostra*, *Milvus*, *Haliastur*, *Haliaeetus*, and *Ichthyophaga*, used by Brown & Amadon (1968) and Morony *et al.* (1975), contains only 2 genera, *Lophoictinia* and *Hamirostra*, in which the phalanges are not fused. These 2 genera have been associated with the others only on very superficial similarities. For instance, Amadon (1978: 115) stated that *Lophoictinia* "looks much like a *Milvus*" but at the same time he remarked that *Hamirostra* "is aberrant for a kite in its buteonine proportions" and that *Lophoictinia* and *Hamirostra* "probably represent some earlier incursion of milvine stock into Australia and are not particularly close to either *Milvus* or *Haliastur*". The absence of fused phalanges in *Lophoictinia* and *Hamirostra* suggests that better supporting evidence is needed before a relationship between these endemic Australian genera and the milvine kites can be claimed.

Milvus and *Haliaeetus* appear to be closely related, having traditionally been separated only by minor features of external morphology (Amadon 1978). The "fish eagles" *Haliaeetus* and *Ichthyophaga* have long been considered to be related to *Milvus* and *Haliaeetus* (Ridgway 1873, Brown & Amadon 1968). Of the taxa with fused phalanges, *Ictinia* is the least like the others in appearance and habits, although no evidence seems to be available to ally it more closely with any other genus or group of genera. The fused condition of the phalanges is thus correlated neither with size nor with feeding habits, being found in small kites such as *Ictinia* as well as in some of the largest of the eagles, and in insectivorous, in scavenging, and in highly piscivorous species. Because the fusion of the phalanges may at times be confined to the ventral surface, it would appear that this is an adaptation to prevent hyperextension at the base of the inner toe; but it is not clear why this would be of advantage to the particular species possessing this adaptation, as opposed to other raptors.

THE RELATIONSHIP OF *Busarellus*

An unexpected revelation in this study was the discovery of fused phalanges in the Black-collared Hawk or Fishing Buzzard *Busarellus nigricollis*. This distinctive species ranges from southern Mexico, through much of South America and is specialized for catching fish, even to having prickly spicules on the soles of the feet in the manner of ospreys (*Pandion*). Brown & Amadon (1968: 565) express the current view of the relationships of this singular bird as follows:

"A specialized member of the group of neotropical sub-buteonines which includes *Heterospizias*, *Buteogallus* and *Parabuteo*.

Ridgway thought the genus was very isolated and related to the Australian kite (*Hamirostra*). We assume, however, that the resemblance to that genus is superficial and the resemblance to the neotropical genera just mentioned is real."

From a review of the literature, it appears to me that much of the sequence of genera of New World Accipitridae now in use is derived from the early, preliminary work of Ridgway (1873, 1876, and other studies), with very little of substance having been added subsequently. In one of his first ventures at a classification of the diurnal raptors, Ridgway (1873) placed *Busarellus* (then known as *Ichthyoborus*) in his "group *Haliaeeti*" along with *Haliaeetus*, *Haliaeetus*, and *Milvus*. Three years later, Ridgway (1876) placed *Busarellus* after *Herpetotheres* (a member of the Falconidae), *Heterospizias*, and *Buteogallus*, and before *Harpia*, *Morphnus*, and *Gampsonyx* (a kite related to *Elanus*). It does not seem that Ridgway intended any particular degree of relationship to be implied by the sequence he used in this work. Although he characterized *Busarellus* as having the "general form and appearance of *Buteogallus aequinoctialis*" (Ridgway 1876: 142), this was evidently intended for descriptive purposes only. While noting some superficial similarities to *Pandion*, he went on to say that *Busarellus* "is much more nearly related to the heliaetine groups, especially to the remarkable Australian genus *Gypoictinia* [= *Hamirostra*], from which, however, it is widely distinct, as it is from all American genera". Thus, on 2 occasions Ridgway (1873, 1876) clearly stated that he thought *Busarellus* was related to *Haliaeetus* and its presumed allies. I believe that this is probably the last opinion on the matter to be founded on anything other than tradition. Other authors seem merely to have adopted

much of Ridgway's sequence in preference to his stated beliefs. Therefore, most subsequent works (e.g. Swann 1922, Peters 1931, Hellmayr & Conover 1949, Friedmann 1950, Brown & Amadon 1968) list *Busarellus* somewhere in the vicinity of *Buteogallus*. To my knowledge, no characters have been published to justify this arrangement.

In plumage, *Busarellus* does not closely resemble any of the genera with which it is presently associated, but its white head streaked with dusky, overall chestnut coloration, and blackish remiges are reminiscent of the Brahminy Kite *Haliastur indus*, on one hand, and *Haliaeetus*, particularly *H. vocifer*, on the other. It should be noted, however, that the transverse barring of the thighs and venter in juveniles of *Busarellus* are not found in *Milvus*, *Haliastur*, or *Haliaeetus*, and could be cited as being similar to such taxa as *Buteogallus* and *Heterospizias*.

In the sequence *Milvus-Haliastur-Haliaeetus-Ichthyophaga*, there is an increasing affinity among the species for aquatic environments as well as an increasing dependence upon fish in the diet. Although the species of *Buteogallus* frequent swampy areas and prey largely or entirely on crabs, the highly specialized fish-catching behaviour of *Busarellus* seems more similar to that in some of the species of *Haliaeetus*.

The strongest evidence for an association of *Busarellus* with the *Milvus-Haliaeetus* assemblage is the fusion of the phalanges of the inner toe, present in 6 of the 7 skeletons examined. The exceptional individual did not seem to be misidentified, nor was it clearly a juvenile bird. No variation was observed in this character in any of the other species that possess it, although no ontogenetic series was available by which to determine exactly when the fusion takes place during development. If the specimen of *Busarellus* with unfused phalanges is merely an abnormal individual, there is not sufficient material available to ascertain how frequently this abnormality occurs.

It is probably safe to conclude that the species of *Milvus*, *Haliastur*, *Haliaeetus* and *Ichthyophaga* constitute a natural assemblage. Phalangeal fusion, plumage, and feeding habits suggest that *Busarellus* may belong with this assemblage, whereas phalangeal fusion appears to be the only character yet known to indicate that *Ictinia* also belongs with this group. Justification for putting *Busarellus* and *Ictinia* with the milvines requires confirmation by other characters, but the same is true of the placement of almost any of the genera of Accipitridae, a family in dire need of a comprehensive systematic revision that is thoroughly grounded in comparative anatomy of internal structures. It is hoped that knowing the true distribution of phalangeal fusion in the family will further this end.

Acknowledgements: I am especially grateful to Ned K. Johnson, Lester L. Short, and Robert W. Storer for lending specimens that were crucial to this study. For useful comments on the manuscript I am indebted to Dean Amadon, Kenneth C. Parkes, and David W. Steadman.

References:

- Amadon, D. 1978. Remarks on the taxonomy of some Australasian raptors. *Emu* 78: 115-118.
 Brown, L. & Amadon, D. 1968. *Eagles, Hawks and Falcons of the World*. 2 vols. New York: McGraw-Hill.
 Friedmann, H. 1950. The birds of North and Middle America. *Bull. U.S. Nat. Mus.* 50, part XI: 1-793.

- Hellmayr, C. E. & Conover, H. B. 1949. Catalogue of birds of the Americas. *Zool. Ser. Field Mus. Nat. Hist.* 13, part 1, no. 4: 1-358.
- Jollie, M. 1977. A contribution to the morphology and phylogeny of the Falconiformes. Part IV. *Evolutionary Theory* 3: 1-143.
- Morony, J. J., Jr., Bock, W. J. & Farrand, J., Jr. 1975. *Reference List of the Birds of the World*. New York: American Museum of Natural History.
- Peters, J. L. 1931. *Check-list of Birds of the World*. Vol. 1. Cambridge, Massachusetts: Harvard University Press.
- Ridgway, R. 1873. Catalogue of the ornithological collection in the museum of the Society. II. Falconidae. *Proc. Boston Soc. Nat. Hist.* 16: 1-66.
- 1876. Studies of the American Falconidae. *Bull. U.S. Geol. Geogr. Surv. Territories* 2(2): 91-182.
- Shufeldt, R. W. 1895. Some comparative osteological notes on the North-American Kites. *Ibis Ser.* 6(3): 228-232.
- Swann, H. K. 1922. *A Synopsis of the Accipitres (Diurnal Birds of Prey)*. London: Wheldon and Wesley.

Address: Storrs L. Olson, National Museum of Natural History, Smithsonian Institution, Washington, D.C. 20560, U.S.A.

© British Ornithologists' Club 1982.

A new subspecies of *Serinus estherae* (Carduelidae) from Sulawesi

by K.-L. Schuchmann & H. E. Wolters

Received 6 June 1981

The avifauna of Sulawesi, formerly known as Celebes, has been studied extensively by Stresemann (1939-1941, *J. Orn.* Vols. 87-89). Since his biogeographical and systematic survey of the birds of this island, based on a collection gathered during an expedition by G. Heinrich from 1930 to 1932, little additional information on the birdlife of Sulawesi has come to our knowledge.

In August 1980, Mr. Christian Krause, one of our collectors, visited the southern ridge of Mt. Rantekombola, Sulawesi (3°23'S, 120°02'E). His field headquarters was situated above treeline at an elevation of 2300 m, where the vegetation is dominated by extended grassland with scattered shrubs. Here he observed small flocks (up to 6 individuals) of *Serinus estherae*, a carduelid seedeater formerly unknown on the island. According to his observations *S. estherae* was restricted to open habitats between 2000 and 3000 m around Mt. Rantekombola. One specimen was collected and is now in the bird collection of the Zoologisches Forschungsinstitut und Museum A. Koenig (ZFMK) in Bonn, FRG. It constitutes a new race:

Serinus estherae renatae subsp. nov.

Type: Adult, probably male; Mt. Rantekombola, Sulawesi, elevation 2300 m, 6 August 1980; collected by Christian Krause. Reg. No. Zoologisches Forschungsinstitut und Museum Alexander Koenig, Bonn 81.563.

Diagnosis: *S. e. renatae* differs mainly from all other subspecies of *S. estherae* by its heavier and wider, cone-shaped beak (see Fig. 1 and Table 1). Otherwise it is similar to *S. e. vanderbilti* de Schauensee (of which *S. e. ripleyi* Chasen is a

synonym): forehead yellow, back dark greyish brown, the head being somewhat lighter greyish brown, the malar region with only the slightest indication of a yellow wash; rump golden yellow, upper tail coverts dark, edged with golden yellow; upper wing coverts and secondaries dark with narrow yellow tips; belly whitish, without the brown centres to the feathers that are apparent on the breast.

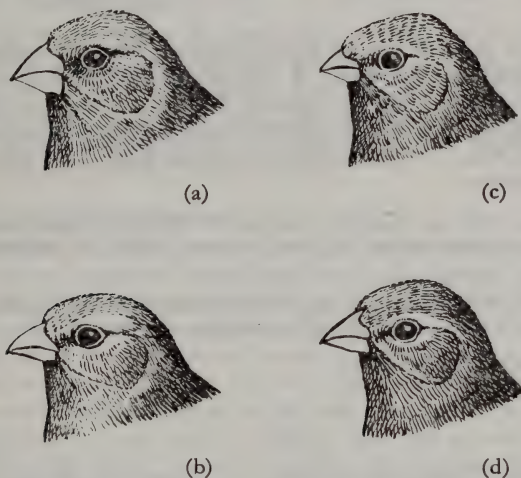


Fig. 1. (a) *Serinus estherae renatae* (note shape of beak), (b) *S. e. orientalis*, (c) *S. e. vanderbilti*, (d) *S. e. estherae*.

TABLE I
Mensural characteristics (mm) of *Serinus estherae* subspecies

	<i>vanderbilti</i>	<i>estherae</i>		<i>orientalis</i>	<i>renatae</i>	<i>mindanensis</i>		
	♂	♂	♀	♂	♂	♂	♀	o
Wing	67	65-71 (n=4)	67-68 (n=4)	69	71	70	72	69-70 (n=2)
Culmen	8	9	9	8	11	9	7	7
Bill-width	5	6	6	5	8	6.5	6.5	6.5-7 (n=2)
Rectrices	42	43-46 (n=4)	40-45 (n=4)	45	58	39	45	45-46 (n=2)
Tarsus	11	12-15 (n=4)	9-15 (n=4)	11	13	12	12	11-12 (n=2)

Notes: Measurements are those of one specimen unless otherwise indicated.

o = unsexed.

Measurements: see Table 1.

Range: Known only from the type locality.

Specimens examined:

Serinus estherae vanderbilti de Schauensee: ♂, type of *S. e. ripleyi* Chasen, Mt. Leuser, N. Sumatra; Mus. Leiden 14057.

Serinus estherae estherae (Finsch): 4 ♂♂ (incl. type), 4 ♀♀, Mt. Pangerango, W. Java; Mus. Leiden 44668, 44691, 44710, 44716, 44657, 44703, 44704, 44711.

Serinus estherae orientalis Chasen: ♂ (type), ♂, Tengger Mts, E. Java; Mus. Leiden 14058.

Serinus (estherae) mindanensis Ripley & Rabor: 1 ♂, 1 ♀, 2 unsexed (probably ♀♀), Mt. Katanglad, Mindanao, Philippines; Mus. Koenig, Bonn, 1966. 468, 1966. 469, 1966. 470, 1966. 471.

Etymology: We name this new carduelid for our colleague Dr. Renate van den Elzen in recognition of her work on the ethology of *Serinus* and its allied genera.

Remarks: *Serinus estherae renatae* from Sulawesi fills the geographical gap between the western members of the *estherae* group and *S. mindanensis*, originally regarded as a distinct species, but now usually treated as a subspecies of *S. estherae*. Even in its morphological characters, most obvious in the shape of its bill, *S. e. renatae* fits into a clinal gradation within the *Serinus estherae* superspecies.

Acknowledgements: We are especially indebted to Christian Krause who discovered *S. estherae renatae* in Sulawesi and to Dr. Mees, Museum Leiden, for sending skins for comparison.

Address: Dr. Karl-L. Schuchmann and Dr. Hans E. Wolters, Zoologisches Forschungsinstitut und Museum A. Koenig, Adenauerallee 150-164, 5300 Bonn 1, FRG.

© British Ornithologists' Club 1982.

Speckled Wood Pigeon *Columba hodgsonii* and Lesser Whitethroat *Sylvia curruca*, two new species for Thailand

by Philip D. Round

Received 18 June 1981

During fieldwork on Doi Inthanon, Chiangmai Province, NW Thailand in December 1980 the author, in company with other ornithologists, made single sightings of both Speckled Wood Pigeon *Columba hodgsonii* and Lesser Whitethroat *Sylvia curruca*. Details are also given of a subsequent sighting of Lesser Whitethroat made by W. E. Fletcher.

SPECKLED WOOD PIGEON *Columba hodgsonii*.

On 16 December a flock of about 80 pigeons was seen in treetops by the roadside in an area of evergreen cloud forest at an elevation of about 2200 m. While perched, they were observed from a stationary vehicle by R. Dobias, D. S. Melville, G. C. Yong and the author at a range of 30-40 m. After about 2 minutes, they flew off down a steep forested slope and were lost from view. It was immediately recognised that the birds were of a species not previously recorded for Thailand, but they were not conclusively identified until reference had been made to King *et al.* (1975) and Ali (1977). Although rather heavily-built, the birds were noticeably smaller and more pointed-winged than Mountain Imperial Pigeon *Ducula badia* which was

seen fairly regularly on Doi Inthanon. The upperparts appeared very dark, either maroon or chocolate-coloured and showed profuse white speckling on the wing coverts. The tail was entirely blackish without any suggestion of paler tips or margins. The head and neck were paler than the rest of the upperparts, appearing greyish, though with prominent dark streaks on the sides of the neck. The colour of the underparts was not specifically noted though these were slightly paler than the upperparts. Fine white speckling was also evident on the flanks.

Although we drove along the same road at least twice daily during the next 4 days, the birds were not seen subsequently. The Speckled Wood Pigeon is known from the Western Himalayas through to Burma and Western China (Szechuan, Kansu and Yunnan). Although mainly resident, it is subject to seasonal nomadic movements depending on food supply (Ali *op. cit.*, Ali & Ripley (3) 1969, Cheng 1976).

LESSER WHITETHROAT *Sylvia curruca*.

On 29 December, M. Rowbottom, S. Webb and the author found a Lesser Whitethroat in an extensive deforested area, dominated by low, woody herbage and scrub with a few scattered trees, at an elevation of about 1300 m. First located in the crown of a small tree, the bird then flew into low bushes and was observed at ranges down to 20 m intermittently for about 2 minutes before contact was lost. It was a medium size warbler with a moderate to long, square-ended tail, a rather stout bill and thick tarsi. The head was dark grey, with the ear coverts slightly darker than the crown, the back and wings a dull grey-brown. The tail was dark grey or blackish, with white outer tail feathers which were seen in flight only. The throat was white and contrasted very sharply with the dark ear coverts. The remainder of the underparts were also whitish, suffused with dull greyish-buff on the breast and flanks. The eye, bill and tarsi all appeared dark. The bird was seen to wag its tail downwards very slightly on a few occasions. The call note was a soft *tac* repeated at frequent intervals.

A further sighting of Lesser Whitethroat has since been made on Doi Inthanon, in an area of deciduous woodland, secondary growth and scrub at c. 400 m on 4 March 1981 (W. E. Fletcher *in litt.*). The bird was sketched.

All observers involved are highly familiar with Lesser Whitethroats in Europe. The only other similarly-marked species in the area was Grey-breasted Prinia *Prinia hodgsonii*, which by comparison was much smaller, longer-tailed and finer billed, with quite different actions and behaviour.

These appear to be the first records of Lesser Whitethroat for SE Asia. Both sightings were probably referable to the race *S. c. blythi* which breeds in Central Siberia from Lake Baikal to the Ob River and which is a common and widespread winter visitor to the Indian subcontinent (Ali & Ripley (8) 1973). The plumage characters of *blythi* are closer to those of the nominate *S. c. curruca* which breeds in Europe and from which the Inthanon birds did not appear to differ, than are those of either *S. c. minula* or *S. c. althaea*, both of which also winter in India.

Acknowledgements: The author, R. Dobias, D. S. Melville and G. C. Yong were members of an expedition which was coordinated by Dr. Boonsong Lekagul and funded by the Smithsonian Institution. The author is also grateful to Dr. Boonsong for his subsequent

and continuing advice and support, to D. Goodwin and D. S. Melville for their comments on this manuscript and to W. E. Fletcher for permission to include details of his sighting of a Lesser Whitethroat.

References:

- Ali, S. 1977. *The Birds of the Eastern Himalayas*. New Delhi: Oxford University Press.
 Ali, S. & Ripley, S. D. 1968-1974. *Handbook of the Birds of India and Pakistan*. 10 vols. Bombay: Oxford University Press.
 Cheng, Tso-Hsin. 1976. *Distributional List of Chinese Birds*. Peking: Science Press.
 King, B. F., Dickinson, E. C. & Woodcock, M. W. 1975. *A Field Guide to the Birds of South-East Asia*. London: Collins.

Address: Philip D. Round, Association for the Conservation of Wildlife, 4 Old Custom House Lane, Bangkok 5, Thailand.

© British Ornithologists' Club 1982.

The introduction and subspecies of the Rose-ringed Parakeet *Psittacula krameri* in Egypt

by Steven M. Goodman

Received 16 July 1981

The Rose-ringed Parakeet *Psittacula krameri* has been introduced in various portions of the world including North America (Bull & Ricciuti 1974), the Middle East (Hüe & Etchécopar 1970) and certain localities in southern and eastern Africa (Clancey 1980, Britton 1980). Although not indigenous to Egypt, the species became established there in the early 1900's as a nesting bird in the Giza Zoological Gardens (Flower & Nicoll 1908, Nicoll 1912). Between 1901 and 1908, several captive birds held within the zoo escaped and are presumed to be the original stock of the extant local population, which later spread to the environs of Giza and Cairo. However, this was not the first modern introduction into Egypt, for in the United States National Museum (USNM) there is a ♂ specimen (152788) collected on 19 December 1895, at Helwan. Because the specimen shows no signs of being a cage bird (e.g. no excessive feather wear, no rings, etc.), it is presumed that it was free roaming.

The feral population within the zoo grounds quickly adapted to the local conditions and apparently became such a pest that between 1916 and 1919 127 birds were killed (Flower 1933). Meinertzhagen (1930) reported them well established in the Giza area, and some occasionally wandered to Helwan and the Delta Barrage. Haensel (1975), found about 50 individuals living wild on the zoo grounds in the fall of 1971. In January-February 1979 (with Mr. Patrick H. Houlihan) and in late April-May 1981 I observed flocks of 35 and 40 birds (respectively) on the zoo grounds. Sutton (1945) did not report the bird in the nearby Gezira Sporting Club, Zamalek (about 4 kms from the Giza Zoological Gardens), but, by the spring of 1981 it had found suitable refuge there as a breeding resident, and flocks of up to 15 could be seen (pers. obs.). The Rose-ringed Parakeet's recent feral distribution in Egypt, however, is not just confined to the general Giza-Cairo area. In the USNM there is a ♀ specimen (551117) collected on 14 April 1971

at Bahig (30 km southwest of Alexandria and 190 km northwest of Giza). Because of the distance between Giza and Bahig, it is most likely that its introduction at these localities are independent of one another.

The identification of the subspecies introduced into Egypt has remained somewhat of a problem. Meinertzhagen (1930) tentatively assigned it to *manillensis*, but subsequently (1954) altered this identification and claimed it was *borealis* that was introduced. Hachisuka (1924) considered the bird referable to *layardi* [= *manillensis*] based on a specimen collected at Giza. Vaurie (1965) identified it as *borealis*.

TABLE I

Comparison of the measurements of Egyptian Rose-ringed Parakeets *Psittacula krameri* collected at Giza between 1910 and 1917 with the 4 extant subspecies.

	Wing (mm)	Tail (mm)	Culmen (mm)
Egyptian specimens			
♂	164-174 (167.0) ¹	202-225 (216.0)	21-26 (24.0)
	(n=10)	(n=6)	(n=9)
♀ (n=6)	155-166 (162.2)	183-211 (198.5)	22-25 (23.2)
<i>manillensis</i> ²			
♂ (n=8)	162-180 (170.0)	203-235 (219.0)	22-25 (23.3)
♀ (n=8)	153-167 (162.6)	174-210 (193.3)	21-24 (22.6)
<i>borealis</i> ²			
♂ (n=9)	170-177 (173.9)	226-253 (239.2)	22-25 (23.2)
♀ (n=8)	170-175 (172.4)	211-230 (220.0)	21-24 (23.0)
<i>parvirostris</i> ²			
♂ (n=10)	146-160 (153.0)	215-246 (233.7)	19-21 (19.6)
♀ (n=8)	148-160 (153.4)	184-218 (196.4)	19-21 (19.6)
<i>krameri</i> ²			
♂ (n=12)	144-157 (150.3)	194-278 (231.4)	18-21 (19.6)
♀ (n=10)	143-152 (147.6)	177-240 (198.2)	18-21 (19.8)

Notes: ¹Range and mean (in parentheses).

= ²Measurements of subspecies after Forshaw (1978).

The Asian subspecies *borealis* and *manillensis*, the forms most commonly introduced around the world, differ from the native sub-Saharan subspecies, *krameri* and *parvirostris*, by being larger (Table 1) and the males having more distinct facial and collar markings (Forshaw 1978). Based on these characters all the Egyptian birds examined are referable to the Asian forms. The Asian subspecies are best separated from one another by bill colour; with *manillensis* having red upper and wholly black lower mandibles, and *borealis* having a red bill that is sometimes marked on the lower mandible with some black (Ali & Ripley 1969). The postmortem colour change of the bill is not very pronounced, and the differentiation between the black and red portions remains distinct in museum specimens. Of the 20 adult specimens examined which were collected at the Giza Zoo between 1910 and 1917, 19 had completely red upper and black lower mandibles, and only 1 had red upper and pied red and black lower mandibles. Thus, according to these characters the birds introduced at Giza belonged to *manillensis*. Further, the specimen from Bahig is also referable to *manillensis*. It is plausible that other subspecies have been introduced into Egypt, as identified by other workers, but none of their specimens was available for this review.

Acknowledgements: I wish to thank Drs. George E. Watson (United States National Museum) and Mohamed Amir and Mohamed Abdel Raheim (Giza Zoological Gardens) for allowing me access to specimens in their care. I gratefully acknowledge a grant from the Frank M. Chapman Memorial Fund. Jenifer Daniels, Mrs. Rita Goodman, G. A. Smith and Dr. Robert W. Storer commented on the manuscript and offered worthwhile suggestions.

References:

- Ali, S. & Ripley, S. D. 1969. *Handbook of the Birds of India and Pakistan*. Vol. 3. Bombay: Oxford University Press.
- Britton, P. L. (ed.) 1980. *Birds of East Africa*. Nairobi: East Africa Nat. Hist. Soc.
- Bull, J. & Ricciuti, E. R. 1974. Polly want an apple? *Audubon* 76(3): 48-54.
- Clancey, P. A. (ed.) 1980. *S.A.O.S. Checklist of Southern African Birds*. Johannesburg: Southern African Orn. Soc.
- Flower, S. S. 1933. Notes on some birds in Egypt. *Ibis* Ser. 13(3): 34-46.
- Flower, S. S. & Nicoll, M. J. 1908. *Wild Birds of the Giza Gardens 1898-1908*. Cairo: Government of Egypt.
- Forshaw, J. M. 1978. *Parrots of the World*. 2nd edition. Newton Abbot: David & Charles.
- Hachisuka, M. U. 1924. Notes on some birds from Egypt. *Ibis* Ser. 11(6): 771-773.
- Haensel, J. 1975. Ornithologische Eindrücke während eines Studienaufenthalts in Ägypten im Herbst 1971. *Beitr. Vogelkd.* 21: 312-322.
- Hüe, F. & Etchécopar, R. D. 1970. *Les Oiseaux du Proche et du Moyen Orient*. Paris: N. Boubée.
- Meinertzhagen, R. 1930. *Nicoll's Birds of Egypt*. Vol. 1. London: Hugh Rees Ltd.
- 1954. *Birds of Arabia*. Edinburgh: Oliver & Boyd.
- Nicoll, M. J. 1912. *Wild Birds of the Giza Gardens, 1898-1911*. Cairo: Government of Egypt.
- Sutton, L. J. 1945. Observation of birds at Gezira Sporting Club. *Bull. Zool. Soc. Egypt* 7: 54-57.
- Vaurie, C. 1965. *The Birds of the Palearctic Fauna. Non-Passeriformes*. London: H. F. & G. Witherby.

Address: Steven M. Goodman, Bird Division, Museum of Zoology, University of Michigan, Ann Arbor, Michigan 48109, U.S.A.

© British Ornithologists' Club 1982.

The White-bellied Swiftlet *Collocalia esculenta* from Java

by S. Somadikarta

Received 12 July 1981

In 1848 (p. 369), Streubel gave a name to a swift from Java, *Hemiprocne fucivora*. The type of this species (ZMB No. 8390, Temminck, Java, sex not indicated) is not a Grey-rumped Treeswift *Hemiprocne longipennis* (see Brooke 1969) as had been supposed, but is a very typical White-bellied Swiftlet *Collocalia esculenta linchi* from Java. It is glossy green, the hindtoe is naked, without white spots on the under part of the tail feathers. The measurements (in mm) of the wing, the tail, the exposed culmen, and the tarsus of this specimen are 87.0 (the ninth primary in moult, score: 2—see Newton 1966) 34.0, 4.0, and 9.0 respectively. These suggest that *Collocalia fucivora* (Streubel 1848) is a senior synonym of *Collocalia linchi* Horsfield & Moore 1854 (a paper on the identity of *C. linchi* is in preparation).

Streubel's name, however, has appeared only once since it was published. Gray (1866: 119) doubtfully listed *Hemiprocne fucivora* Streubel as a synonym

of *Collocalia linchi* Horsfield & Moore; he was suspicious about the accuracy of the description of the bird given by Streubel. Gray (1866: 127) pointed out that "some parts of the description that he gives, however, of his *salangana* [which he implies is equal to the *H. esculenta* of Linnaeus] conveys a doubt as to the bird described by him being really a *Collocalia* . . .". Although Gray doubted the accuracy of Streubel's description, he had apparently not examined the type of *fucivora*. Accordingly, *Collocalia fucivora* (Streubel) may be regarded as an unused senior synonym (see Article 23b, Int. Code Zool. Nomencl. 1964).

Warren (1966: 164) assigned the adult swiftlet specimen 1880.1.1.4649, ex Coll. Ind. Mus., collected by Horsfield from Java as a syntype of *Collocalia linchi* Horsfield & Moore 1854. This specimen, however, is not a typical White-bellied Swiftlet from Java. It is glossy blue, without white spots on the under part of the tail feathers and the feather tuft on the hindtoe is apparently worn off. The measurements (in mm) of the wing and the tail are 95.5 (the 8th primary in moult, score: 3—see Newton 1966), and 37.5 respectively. The bill is partly broken and the tarsus is difficult to measure. This specimen might belong to *C. e. affinis*, and was most probably collected in the Andamans or the Nicobar Islands.

Warren (1966: 164) noted further that there are several other syntypes of *C. linchi* in the collection of the BMNH. It should be noted, however, that only 2 specimens are mentioned in the original description of *Collocalia linchi* Horsfield & Moore 1854, namely: "A. adult, B. young and nest. Java, From Dr. Horsfield's Collection". In the collection of the BMNH there is only one typical adult White-bellied Swiftlet specimen from Java bearing labels similar to those of 1880.1.1.4649. It is registered as 80.1.1.4619, and designated as "cotype of *Collocalia linchi*". A young specimen bearing labels similar to those of the specimens 1880.1.1.4649 and 4619 could not be located in the collection.

Consequently, the specimen 1880.1.1.4649 listed by Warren (1966: 164) as a syntype of *C. linchi* must have been wrongly labelled; this number being most likely that of the unlocated young White-bellied Swiftlet specimen collected by Horsfield from Java. The adult specimen 80.1.1.4619, ex Coll. Ind. Mus., collected by Horsfield from Java (sex not indicated) is here designated as the lectotype of *Collocalia linchi* Horsfield & Moore 1854. The measurements (in mm) of the wing, the tail, and the exposed culmen are 94.0, 41.0, and 3.5 respectively; the tarsus is difficult to measure.

Acknowledgements: I am indebted to Mr. I. C. J. Galbraith of the British Museum (Natural History) and to Dr. G. Mauersberger of the Zoologisches Museum, Berlin who kindly allowed me to examine specimens in the collections in their charge. I am also obliged to Mr. C. W. Benson of the University of Cambridge and to Dr. M. R. Wilson of the University College, Cardiff, for critically reading the draft and suggesting improvements. A generous grant from The British Council is gratefully acknowledged. Research on the taxonomy of the swiftlets has been partially carried out during my tenure as National Research Council Visiting Research Associate at the Division of Birds of the Smithsonian Institution, Washington, D.C.

References:

- Brooke, R. K. 1969. *Hemiprocne coronata* is a good species. *Bull. Brit. Orn. Cl.* 89: 168-169.
 Gray, G. R. 1866. A synopsis of the species of the genus *Collocalia* with description of new species. *Ann. Mag. Nat. Hist. Ser.* 3 (17): 118-128.

- Horsfield, T. & Moore, F. 1854. Genus *Collocalia*. (In) *A Catalogue of the Birds in the Museum of the Hon. East-India Company*. Vol. 1: 98-106. W. H. Allen: London.
- Newton, I. 1966. The moult of the Bullfinch *Pyrrhula pyrrhula*. *Ibis* 108: 41-67.
- Streubel, A. B. 1848. Die Cypseliden des Berliner Museums. *Isis von Oken*: 348-373.
- Warren, R. L. M. 1966. *Type Specimens of the Birds in the British Museum (Natural History)*. Vol. 1. *Non-Passerines*. Trustees of the British Museum (Natural History).

Address: Dr. S. Somadikarta, Museum Zoologicum Bogoriense, Bogor, Indonesia.

© British Ornithologists' Club 1982.

Notes on the nesting behaviour of *Acrocephalus aequinoctialis*

by Sharon L. Milder & Ralph W. Schreiber

Revised 12 July 1981

The Bokikokiko, or Christmas Island Warbler, *Acrocephalus aequinoctialis* is endemic to the Line Islands and the papers by Gallagher (1960), Clapp & King (1975) and Schreiber (1979) are the only published sources of information on this species. While on Christmas Island (2°N, 157°W), central Pacific Ocean, between 12 and 21 July 1980 we recorded observations on nestling behaviour, behaviour of adults while feeding, and flight and prey capture by adults of this species.

On 12 July 1980 Milder discovered a nest containing four nestlings estimated as 5-7 days old. The nest was located c. 2 m off the ground on the mainland side of a 5 m tall Beach Heliotrope *Messerschmidia argentea* on the beach crest. Finding the nest was easy because the young called frequently when left alone by the parents, and the duration, intensity, and volume of calling increased when parents arrived at the nest. Both parents fed the young, and the nest was visited on an average of once every 2.5 minutes during the 6.5 hours of observation (Figure 1) during 9 days which covered all times of

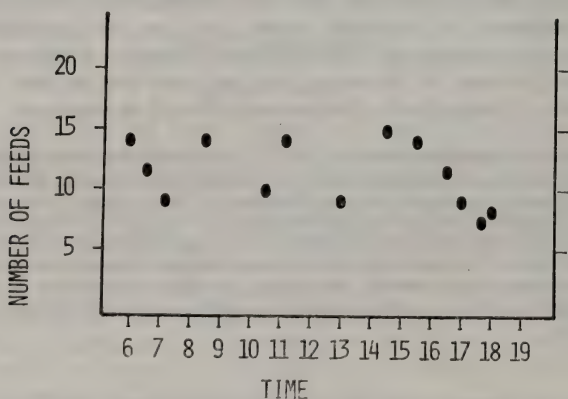


Fig. 1. Number of feedings per half hour by adult *Acrocephalus aequinoctialis*. Sunrise (06.30), sunset (18.30).

day. This feeding rate is similar to that recorded for continental nesting passerines of similar size (Pringle 1977, Henry 1977, Skutch 1960). Faecal sacs were carried away from the nests by adults and none was observed being eaten.

Although lizard tails (geckos, *Lepidodactylus lugubris* and *Hemidactylus frenatus*) were also fed to the young (Schreiber 1979), the main food item we noted brought to nestlings was houseflies (*Musca domestica*). This nest was located about 100 m from a garbage dump where flies were present in large numbers. Bokikokiko adults flew to the dump and caught flies by running-hopping after them. After catching 1-3 flies ($n=10$ observations) the adult would return to the nest and feed one or more young. The parent birds called frequently. On 20 July a feral domestic cat was at the dump when an adult came to feed. A loud call was given by the mate from a bush next to the dump and the feeding bird flew from the dump to the bush and landed near its mate and both called loudly.

On the afternoon of 17 July, 4 nestlings were present; on the next morning only 2 remained; one more departed that afternoon, and all 4 chicks were in the bush within 2 m of their nest on 19th and 20th. On 18th we approached closely and one of the chicks fell to the ground. It hopped with apparent dexterity from twig to twig until it had climbed to near the nest. The parents continued to feed their chicks after all were out of the nest. Four days after fledging, the young continued to hop about the bush. We observed no flying and no feeding on their own at this stage, but they hopped from twig to twig and fluttered for short distances (maximum 20 cm) between twigs. Nestlings stretched legs and wings, and preened, but we never observed "practice flying".

Flight of the adults, as noted by Gallagher (1960), is not strong and was mostly level or on a descending glide, with intermittent shallow, laboured wing beats. When the parents returned to the nest-bush they flew into the bush at a height of c. 1 m, then hopped from branch to branch up to the nest. On leaving the nest they would hop to the upper portions of the bush and take flight. We never saw an adult in level flight above 3 m from the ground and in fact, level flight was unusual and only over short distances (20-30 m). Flight higher and longer than that usually involved descent from the upper portions of a bush.

Insufficient data exist at present to determine a breeding season for this species on Christmas Island. However, in July 1980, in the 20 hectares surrounding the Captain Cook Hotel we located 6 pairs of birds, all of which seemed to be maintaining territories, pair members remaining in close communication with each other. We could find these pairs consistently in certain locations but did not observe any interterritorial behaviour. No other nests were found and the nest we observed was the only one that could have had a garbage dump inside its territory. Perhaps this food source allowed this particular nesting in June-July. Future observations will be needed to determine if these birds maintain permanent territories, what type of pair bond is maintained, how dispersal is effected, and what controls the timing of their breeding season.

On 17 July we mist-netted one adult at 18.00 hrs. It weighed 19.0 g, the exposed culmen measured 15 mm, the tarsus 30 mm, and unflattened wing chord 70 mm.

The prime factors limiting the population of this island dwelling bird are its food supply and the nest sites. The introduced cats and rats do not appear to be a factor and no competing passerine is present. Christmas Island Warblers apparently nest only in *Messerschmidia argentea*, which has branches extending to the ground, probably because it enables hopping easily from the low branches to the top of the tree. Nest site availability is probably, however, not a problem for the warbler, since the bushes are abundant on the island, though mature bushes of the proper configuration may be limited. An increase in garbage dumps, with its attendant growth of fly populations, will be beneficial in the short term to the species; but with the increasing human population, this fascinating island species will undoubtedly suffer in the long run.

We have made a small step toward elucidating the biology of this isolated species. Clearly, further studies on all aspects of its biology are needed to further understanding of the effects of isolation and the lack of native predators and competitors on its behaviour. Additionally, studies of its anatomy and flight capability are needed and the time to worry about its population size is now.

Acknowledgements: Elizabeth Anne Schreiber was most helpful in all ways during this study, Andrea Kaufman assisted in photography, Robert Bezy identified the lizards, and Thomas R. Howell made valuable comments on the ms.

References:

- Clapp, R. B. & King, W. B. 1975. Status of the Kokikokiko *Acrocephalus aequinoctialis*. *Bull. Brit. Orn. Cl.* 95: 2-3.
- Gallagher, M. D. 1960. Bird notes from Christmas Island, Pacific Ocean. *Ibis* 102: 489-502.
- Henry, C. 1977. Nourrisage des jeunes chez la rousserolle effarvate. *Gerfaut* 67: 369-394.
- Pringle, J. S. 1977. Breeding of Knysna Scrub Warbler. *Ostrich* 48: 112-114.
- Schreiber, R. W. 1979. The egg and nest of the Bokikokiko *Acrocephalus aequinoctialis*. *Bull. Brit. Orn. Cl.* 99: 120-124.
- Skutch, A. 1960. Life histories of Central American birds, II. *Pacific Coast Avifauna* No. 34.
- Address:* S. L. Milder and R. W. Schreiber, Natural History Museum, 900 Exposition Blvd., Los Angeles, California 90007, U.S.A.

© British Ornithologists' Club 1982.

First sight record of the Spotted Dove *Streptopelia chinensis* from Luzon and a summary of its range expansion in the Philippines by G. P. Waldbauer & Susan M. Waldbauer

Received 23 July 1981

The rapid range expansion of the Spotted Dove *Streptopelia chinensis* in the Philippines was discussed by Rabor (1959), duPont & Rabor (1973a, b) and Parkes (1973). DuPont & Rabor (1973b) offered the most detailed account but did not cite published records of the distribution of this species.

Since about the third decade of this century *S. chinensis* has been moving north and east through the Philippines from its original footholds on the

islands of Balabac and Palawan. Although *S. chinensis* was only recently reported from the Sulu Archipelago (see below), duPont & Rabor (1973b) believed that there was also a northeastward movement, presumably from Borneo, via the Sulu Archipelago to the Zamboanga Peninsula of Mindanao.

By 1971 *S. chinensis* was known from most of the major Philippine islands south of Luzon. DuPont & Rabor (1973b) reported that in many localities *S. chinensis* was in the process of pre-empting the habitat originally occupied by the Philippine turtle dove, *S. bitorquata*. In some areas of Cebu, Mindanao and Negros, populations of both species could still be found together, but in many other areas *S. chinensis* had displaced *S. bitorquata* in lowland open country near human settlements, the habitat favoured by both species and occupied predominantly by *S. bitorquata* only 15 years earlier.

S. chinensis has been previously reported from the following Philippine islands: Balabac and a questionable report from Palawan (Worcester & Bourns 1898); Basilan (Kuroda 1927); Palawan (Hachisuka 1932); Busuanga (Manuel 1937); Mindanao (Rabor 1952); Negros (Rabor 1954—cited by Rabor 1959); Cebu (Rabor 1959); Leyte (duPont 1971; see Parkes 1973); Bongao, Sanga Sanga and Tawitawi of the Sulu Archipelago (duPont & Rabor 1973a); Dinagat and Siargao (duPont & Rabor 1973b).

On 3 occasions we saw *S. chinensis* on the experimental farm of the International Rice Research Institute on the island of Luzon near Los Baños, Laguna, Republic of the Philippines. The Institute is about 70 km southeast of Manila and just south of Laguna de Bay, a large lake. The observations noted below were made through 8× binoculars. We are confident of our identification because we had become acquainted with this species only 3 months earlier on the island of Hawaii, where it has been introduced.

On 3 September 1978 we watched a *S. chinensis* for about 15 minutes and from a distance of about 40 m as it carried nesting material to the head of a tall coconut palm. There may actually have been 2 doves making alternate trips, but there was no way of confirming this. On 30 September 1978 we saw a flock of 5 feeding on the ground, and on 3 October 1978 we saw one individual on the ground. *S. chinensis* was never abundant during our stay at the Institute from June 1978 to July 1979.

Acknowledgement: We thank Edward C. Dickinson for acquainting us with the literature on the distribution of *S. chinensis* in the Philippines.

References:

- duPont, J. E. 1971. *Philippine Birds*. Delaware Museum of Natural History: Greenville. 479 pp.
- duPont, J. E. & Rabor, D. S. 1973a. South Sulu Archipelago birds, an expedition report. *Nemouria* 9: 1–63.
- — 1973b. Birds of Dinagat and Siargao, Philippines. *Nemouria* 10: 1–111.
- Hachisuka, M. 1932. *The Birds of the Philippine Islands, with Notes on the Mammal Fauna*. Vol. I (2): 169–439. H. F. and G. Witherby: London.
- Kuroda, N. 1927. On a collection of birds from the island of Basilan, southern Philippines. *Tori (Bull. Ornith. Soc. Japan)* 5: 199–261.
- Manuel, C. G. 1937. A review of Philippine pigeons, V, subfamilies Columbinae, Geopeliinae, Phabinae and Caloenadinae. *Philippine J. Sci.* 63: 175–184.
- Parkes, K. C. 1973. Annotated lists of the birds of Leyte Island, Philippines. *Nemouria* 11: 1–73.

- Rabor, D. S. 1952. Distributional notes on some Philippine birds. *Auk* 69: 253-257.
 — 1959. The impact of deforestation on birds of Cebu, Philippines, with new records for that island. *Auk* 76: 37-43.
 Worcester, D. C. & Bourns, F. S. 1898. Contributions to Philippine ornithology. Part I. *Proc. U.S. Nat. Mus.* 20: 549-566.

Address: G. P. Waldbauer and Susan M. Waldbauer, Department of Entomology, 320 Morrill Hall, University of Illinois, 505 S. Goodwin, Urbana, IL 61801, U.S.A.

© British Ornithologists' Club 1982.

Swamp-dwelling weavers of the *Ploceus velatus/vitellinus* complex, with the description of a new species

by M. Louette and C. W. Benson

Received 27 July 1981

In this paper we use the generic name *Ploceus* in the broad sense of, e.g. White (1963) and Hall & Moreau (1970). White (pp. 133-134) uses the single specific name *velatus* for the above complex, and briefly but usefully defines subspecific differences. Hall & Moreau (p. 284) divide *velatus* into 2 groups, a southern *velatus* and a northern *vitellinus*; the northernmost form of the former being *P. velatus reichardi*, of southwestern Tanzania. This form is above all distinctive in that the male in breeding dress has the yellow of the breast and flanks heavily overlaid with chestnut. The fore part of the crown is relatively extensively chestnut (as in the *vitellinus* rather than the *velatus* group), while the greens and yellows of the plumage as a whole are unusually bright. The *vitellinus* group as recognised by Hall & Moreau is associated with dry woodlands and savannas. So too through most of its range is the *velatus* group, but with some notable exceptions in the northeast of its range.

The form *reichardi* seems to be typically associated with swamps, perhaps entirely so in the breeding season (in the rains): a point that is not mentioned by Britton (1980). It seems also to be often markedly colonial in its nesting (Böhm 1885: 70, as *Hyphantornis vitellinus*; Vesey-FitzGerald 1956, Beesley 1956), Beesley mentioning colonies varying in numbers from 4 to 150. Vesey-FitzGerald & Beesley (1960: 108) do also record its occurrence in woodland, but as in the following form this may merely represent off-season wandering.

The form *katangae*, of northeastern Zambia northward from Lake Bangweulu, and in adjacent Zaire by the River Luapula and Lake Mweru, and at Musosa (Benson *et al.* 1971, Schouteden 1971: 220), is likewise essentially a swamp-dweller. Ecologically it contrasts strikingly with nominate *velatus* (or according to Clancey 1974: 76, *she'leyi*), probably essentially confined as a breeder to dry *Acacia* woodland. Yet the 2 forms, of which *katangae* is very markedly the smaller (with no overlap, sex by sex, in wing-length), occur within 100 miles (160 km) of one another. Although Aspinwall (1974: 11) and Taylor (1977: 55) do give records of *katangae* from dry ground away from swamps, like *reichardi* it seems to be virtually confined

to swamps when breeding. Benson & Pitman (1956: 40) give some information on breeding. It may be that *katangae*, unlike *reichardi*, never breeds in large colonies of 150 nests. Apart from swamps, these authors (*op. cit.*: 8) do also record it as nesting in bushes on dry ground on Katema Island, but this island is near the eastern shore of the shallow, muddy Lake Mweru-wa-Ntipa, and only c. $\frac{1}{4}$ mile (400 m) in circumference.

Another likely swamp associate is the form *upembae*, known from Kadia, 8°16'S, 26°35'E, and Mabwe, 8°42'S, 26°28'E, in the Upemba National Park, southeastern Zaire. The co-ordinates for both these localities are from Chapin (1954: 671, 695), and indicate that they are respectively near the eastern extremity of Lake Kisale and on the east shore of Lake Upemba. Schouteden (1971: 221) cites both localities, and Verheyen (1953: 612) Mabwe, but neither author gives any information about the habitat. There is also a female from Bukama, 9°10'S, 25°50'E, in the Koninklijk Museum voor Midden-Afrika (KMMA). White (1963: 134) indicates unequivocally that *upembae* is a swamp associate, and there is a strong presumption that this is correct, if only from the situations of Kadia and Mabwe. According to Verheyen (*op. cit.*), *upembae* is a solitary nester.

Benson & Pitman (1956: 40) liken the nest of *katangae* (unspouted, entrance downwardly directed) to that of *tabatali* (=nominate *velatus* in Benson *et al.* 1971; *shellei* in Clancey 1974: 76). Indeed, all the forms in the *velatus/vitellinus* complex seem to have this type of nest. For the nest of *reichardi*, see the photographs in Vesey-FitzGerald (1956), for that of *velatus* in South Africa, see the drawing in McLachlan & Liversidge (1978: 572), and for the *vitellinus* group that in Crook (1960: 8). For comparative photographs of the two, obviously made of different materials, see Collias & Collias (1964: pl. 27), who also (pp. 71-80) describe the nests of various forms and in fact (p. 79) liken the nest of *reichardi* to that of *taeniopterus*, though they could examine only 2 of the former.

A NEW SPECIES FROM THE UPPER LUFIRA, SOUTHERN ZAIRE; ITS APPARENT NEAREST RELATIVE *reichardi*

Ruwet (1965: 413-414) has discussed the breeding habits of the swamp-dwelling *P. melanocephalus* in the swamps bordering the lake Lufira (i.e. Lake Shangalele, or Tshangalele—cf. Times Atlas, 1975: 203, at 10°50'S, 27°03'E, and map in Ruwet 1963: facing 60). Ruwet records several colonies, including one of more than 20 nests, without giving any details of the type of structure, although Plate 1B indicates a similarity to that in the *velatus/vitellinus* complex. It is quite possible that *melanocephalus* does occur in this area, the form *duboisii* being definitely known from as near as the River Luapula and the Lomami District (Benson *et al.* 1971, Schouteden 1971: 219); yet only one specimen was collected, at Kinsamba, near the eastern edge of the maximum level of the lake (map in Ruwet 1963). Verheyen is cited as attributing it to the form *dimidiatus*, whereas Schouteden was dubious about its true identity. Indeed, Schouteden (1971: 221, 223) records only *P. xanthops* and *ocularis* in the name of Ruwet from the Lufira area.

The Kinsamba specimen, a male in almost complete breeding dress, in the KMMA, No. 113379, bearing no precise date of collection (but probably March 1960—Ruwet, pers. comm.) has been compared by both of us with every conceivable form of *Plocens* (males in breeding dress), both in the

KMMA and in the British Museum (Natural History) (BMNH). From the strong chestnut wash on the chest and flanks, *a priori* it might be supposed to be possibly related to *P. dicrocephalus*, *jacksoni*, *intermedius* (chestnut present in *P. i. intermedius* and *beattyi*) or indeed *melanocephalus* (of which some forms, including *dimidiatus*, are washed with chestnut, but not so *duboisii*). In fact it differs markedly from all these in bill shape, and we believe that its nearest relative is *reichardi*. For reasons to be explained below, we propose giving it full specific status (and likewise *reichardi* and *katangae*). Accordingly we name it:—

***Ploceus ruweti* sp. nov.**

Description of the unique holotype. Similar in colour and dimensions to the male in breeding dress of *P. reichardi*, but immediately distinguishable by much more extensive black on the top and sides of the head. The chestnut of the crown is replaced by black, merging sharply into the yellow of the nape (see Plate 1A). The ear-coverts are wholly black, whereas in *reichardi* black is restricted to below the level of the eye (see again Plate 1A), the remainder being yellow. There are also less marked differences: the dusky centres to the feathers of the wing-coverts in *ruweti* are more pronounced and the yellow tones are not so strong, this being best marked on the nape, pale lemon-yellow instead of golden yellow, but also apparent on the rump and abdomen. Conformably, the green of the mantle and back is duller, less yellowish. (It is possible that this dilution of the greens and yellows in *ruweti* is due to immersion of the specimen for an unspecified period in formalin.)

TABLE 1

	Measurements in mm of <i>P. ruweti</i> and <i>P. reichardi</i>			
	wing	tail	culmen (from skull)	tarsus
		<i>P. ruweti</i>		
1♂	71	45	16	20.5
		<i>P. reichardi</i>		
1♂ (type)	68	46	16	21
2♂♂	70, 72	46, 47	16, 16.5	21, 21.5 } (a)
10♂♂	67-71 (69.5)	42-46 (44.3)	16-18 (16.8)	20-22 (21.0) } (b)
1♀	64	40	15.5	19

(a) Measurements by Louette from material in the Zoologisches Museum, Berlin (ZMB): type from Karema, other 2 specimens from Karema, Membwa.

(b) Measurements by Benson from material in the BMNH.

Comparative measurements of *ruweti* and *reichardi* are given in Table 1. The figures for *reichardi* in the BMNH are from more or less the same material as studied by Benson (1955) (although an extra male has now been found), but from only one instead of 3 females, i.e. the one dated 15 July (1936) and which is inseparable in colour from a female of *katangae* taken in the same month. The 1955 culmen measurements are unaccountably shorter, although stated to have been taken from the base of the skull and Benson can only suggest that they might have been of the exposed part only.

THE SYSTEMATIC STATUS OF *katangae*,
upembae, *reichardi* AND *ruweti*

Measurements of *katangae* taken by Benson from material in the BMNH are given in Table 2. Evidently *katangae* is similar in dimensions to *reichardi*

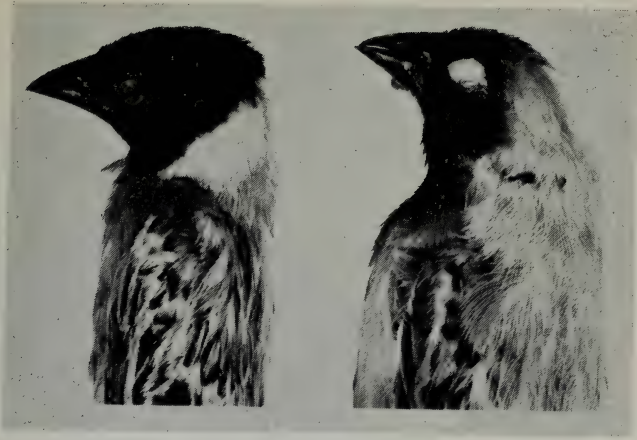


Plate 1A. Left, head of *Ploceus ruweti* ♂, right, of *P. reichardi* ♂. (See Louette & Benson)
Photo: M. J. Ashby.



Plate 1B: Nest attributed to *Ploceus ruweti*. (See Louette & Benson) Photo: J. C. Ruwet.



Plate IIA. Colony of nests in Lufira delta, attributed to *Ploceus ruweti*. (See Louette & Benson)
Photo: J. C. Ruwet.



Plate IIB. Habitat typical of *Ploceus ruweti*, Lufira delta. (See Louette & Benson) Photo:
J. C. Ruwet.

(and apparently *ruweti*). The measurements of wing and culmen for *katangae* from a wider panel in Benson (1955) show no significant difference, although as for *reichardi* (above) the culmen measurements are unaccountably shorter. As to *upembae*, in neither colour nor dimensions does it differ strikingly from *katangae*. While Louette finds that females may be a trifle more olive yellow on the head and mantle, the most significant difference is perhaps that the bill is up to 2 mm longer (Verheyen 1953: 612, Benson 1955). Louette measured 3 *upembae* ♂♂—2 from Mabwe in the Koninklijk Belgisch Instituut voor Natuurwetenschappen (KBIN), Brussels, one from Kadia in the KMMA, as follows:—wing 66-69.5 (67.8), tail 45 (one), culmen (from skull) 17-19 (18), tarsus 20 (one) mm.

TABLE 2
Measurements in mm of *P. katangae*

	wing	tail	culmen (from skull)	tarsus
7 ♂♂	67-70 (69.0)	43-46 (44.9)	16-18 (17.2)	20-22 (21.0)
6 ♀♀	62-64 (63.0)	40-41 (40.3)	15.5-16 (15.9)	18.5-19.5 (19.1)

There is no strong reason against regarding *katangae* and *upembae* as conspecific. As to *reichardi* and *ruweti*, originally Benson speculated that they might be combined in a species distinct from *katangae*, on account of the rich suffusion of chestnut on the underparts and despite the greater extent of black on the head in *ruweti*. (Note that in *P. cucullatus* the crown is black in the males of all forms except the 2 southernmost, in which it is yellow—cf. White 1963: 135-137). It seemed possible that such a species could not co-exist with the species *katangae* because of similar ecological requirements accompanied by little or no difference in size, disregarding the rather longer bill of *upembae*. Nevertheless for the present we prefer to regard *reichardi* and *ruweti* as specifically distinct. The extent of black on the head in *ruweti* is particularly striking. Ruwet (1965: 413) also records *P. velatus*, but does not appear to have obtained a supporting specimen. The record needs to be confirmed. If indeed it could be proved that the species *katangae* is represented in the Lufira area, then the specific status of *ruweti* would be confirmed beyond any doubt. Ruwet (1965: 415) also records *P. xanthopterus*, but this has been questioned by Irwin & Benson (1966: 20), since in Zambia it is only known from Upper Zambezi drainage, above the Victoria Falls. One also wonders what may be the "*Textor velatus*" that Poelman (1967) records from Kasapa, 11°34'S, 27°25'E, stating that it lives along rivers or marshes and does not leave them.

An inspection of map 331 in Hall & Moreau (1970) shows that their *velatus* group has barely penetrated the moist woodland belt of southern Africa except in certain isolated areas of swamp already referred to above. These areas are apparent on the map in Keay (1959) as type 20, "Undifferentiated relatively dry types", and described in the text (p. 9) as "alluvial savannas of tall grass with certain species of *Acacia*". From experience in Zambia, Benson can state that large areas of such alluvium are so moist as to be incapable of supporting the growth of any trees (unless one regards ambatch *Sesbania* spp. as such). So the term "swamp" as already used above

(and see also Benson *et al.* 1971: 24) seems appropriate. It is only in such areas that the *velatus* group (*sensu* Hall & Moreau) is represented. These authors give as one difference between their *velatus* and *vitellinus* groups that in *vitellinus* the crown (of the male in breeding dress) is suffused with chestnut. That this is so in *reichardi* has already been mentioned, and it applies to a lesser degree to *katangae* (including *upembae*). Thus these 3 forms show some evidence of being intermediate between the 2 groups, as might be expected on geographical grounds. Clancey (1974: 72) has alluded to the status of these swamp-dwellers, seemingly implying as one possible course their recognition as a discrete species, under the name *reichardi*. In the past *reichardi* has sometimes been regarded as a monotypic species, as indeed quite recently by Mackworth-Praed & Grant (1955) and Vesey-FitzGerald & Beesley (1960).

It seems that under present climatic conditions the *velatus* and *vitellinus* groups cannot exist in the moist *Brachystegia* ("Miombo") woodlands proper (vegetation types 18 and 19 in Keay 1959), but have managed to adapt to swamps in type 20, isolated within such woodlands. Such a habitat is favoured by certain other species of *Ploceus* in southern Africa, such as *xanthopterus*, *subaureus* and *melanocephalus*, while others, such as *xanthops* and *cucullatus*, are associated with water to some degree. Thus such an adaptation by the *velatus* group might be achieved fairly easily.

We favour Clancey's suggestions that *reichardi* be regarded as a full species. We would also extend Hall & Moreau's groups, adding a third, the *reichardi* group. Pending further detailed investigation of their biology (including nest structure and building technique), we would take a further step, and split this group into 3 species:—*P. reichardi*, *P. katangae* (to include *upembae* as a subspecies) and *P. ruweti*.

Although similar in dimensions, colour-differences in these 3 species are very well marked, doubtless due to isolation in the moist woodlands by which they are surrounded. At present, the only possible difference that might be suspected in their biology is that *reichardi* can breed in quite large colonies (of up to 150 nests); but this may not be of any significance, since the number of nests grouped together even in this species may be as low as 4.

There are many instances of related forms showing a distributional gap between southern (or southwestern) and northern (or northeastern) Africa under existing climatic conditions. An extreme example is provided by another weaver, *P. rubiginosus* (map 332 in Hall & Moreau 1970), restricted to exceptionally dry country. Disregarding the swamp-associates, *P. velatus* (map 331, *op. cit.*) provides a much less extreme instance of this phenomenon. The *reichardi* group, dividing the drier country *velatus* and *vitellinus* groups, provides only one of a number of instances of a representative in the moist woodland belt. Thus, in an entirely different family, the barbets Capitonidae, the *Lybius leucomelas* superspecies consists of 3 species, one in the moist woodland belt (*L. frontatus*), with another each in drier *Acacia* woodland respectively to the south and northeast (map 349 in Snow 1978). In this case it seems that there has been an adaptation by proto-*frontatus* stock direct from a drier to a moister type of woodland, rather than to swamp (a most unlikely habitat for any barbet) as in the *reichardi* group.

Acknowledgements: Louette is grateful to Major Melvin A. Traylor for the loan of a specimen of *Ploceus intermedius beattyi* from the Field Museum of Natural History, Chicago, to Dr. G. Mauersberger for the loan of material, including the type, of *P. reichardi* from the ZMB, and to Dr. A. Prigogine for access to the collections of the KBIN; and Benson likewise to the authorities of the BMNH at Tring for access to their collections. We are both grateful for the loan of specimens from the BMNH, through I. C. J. Galbraith and D. K. Read. Also, Prof. J. C. Ruwet most kindly placed his unpublished information at our disposal, and provided photographs.

References:

- Aspinwall, D. R. 1974. Bird notes from Luapula Province. *Bull. Zambian Orn. Soc.* 6(1): 2-14.
- Beesley, J. S. S. 1956. Notes on *Ploceus reichardi* Reichenow. *Bull. Brit. Orn. Cl.* 76: 158-159.
- Benson, C. W. 1955. The Masked Weaver *Texor velatus* in the south-eastern Belgian Congo and north-eastern Northern Rhodesia. *Rev. Zool. Bot. Afr.* 52: 177-180.
- Benson, C. W., Brooke, R. K., Dowsett, R. J. & Irwin, M. P. S. 1971. *The Birds of Zambia*. Collins: London.
- Benson, C. W. & Pitman, C. R. S. 1956. Some breeding records from Northern Rhodesia. *Ool. Rec.* 30: 7-11, 21-27, 37-43.
- Böhm, R. 1885. Ornithologische notizen aus Central-Afrika III. *J. Orn. Leipzig* 33: 35-73.
- Britton, P. L. (ed.). 1980. *Birds of East Africa*. East Africa Natural History Society: Nairobi.
- Chapin, J. P. 1954. The birds of the Belgian Congo 4. *Bull. Amer. Mus. Nat. Hist.* 75B.
- Clancey, P. A. 1974. Miscellaneous taxonomic notes on African birds XXXVIII. *Durban Mus. Novit.* 10: 67-79.
- Collias, N. E. & Collias, E. C. 1964. Evolution of nest-building in the weaverbirds (Ploceidae). *Univ. of Calif. Publ. Zool.* 73.
- Crook, J. H. 1960. Nest form and construction in certain West African weaver-birds. *Ibis* 102: 1-26.
- Hall, B. P. & Moreau, R. E. 1970. *An Atlas of Speciation in African Passerine Birds*. Trustees of the British Museum (Nat. Hist.): London.
- Irwin, M. P. S. & Benson, C. W. 1966. Notes on the birds of Zambia: part II. *Arnoldia (Rhod.)* 2(37).
- Keay, R. W. J. (ed.). 1959. *Vegetation Map of Africa*. Oxford University Press.
- Mackworth-Praed, C. W. & Grant, C. H. B. 1955. *African Handbook of Birds* 1(2). Longmans: London.
- McLachlan, G. R. & Liversidge, R. 1978. *Roberts Birds of South Africa*. Trustees of the John Voelcker Bird Book Fund: Cape Town.
- Poelman, L. 1967. Les oiseaux de la Kasapa. *Publ. de l'Université Officielle du Congo à Lubumbashi* 14: 39-71.
- Ruwet, J. C. 1963. Notes écologiques et éthologiques sur les oiseaux des plaines de la Lufira supérieure (Katanga) I. *Rev. Zool. Bot. Afr.* 68: 1-60.
- Ruwet, J. C. 1965. Notes écologiques et éthologiques sur les oiseaux des plaines de la Lufira supérieure (Katanga) III. *Rev. Zool. Bot. Afr.* 72: 389-427.
- Schouteden, H. 1971. La faune ornithologique de la Province du Katanga. *Doc. Zool.* 17.
- Snow, D. W. (ed.) 1978. *An Atlas of Speciation in African Non-passerine Birds*. Trustees of the British Museum (Nat. Hist.): London.
- Taylor, P. B. 1977. Some records from Luapula Province. *Bull. Zambian Orn. Soc.* 9(2): 52-57.
- Verheyen, R. 1953. *Exploration du Parc National de l'Upemba*. Fasc. 19. Brussels.
- Vesey-FitzGerald, D. F. 1956. Nesting of the Tanganyika Masked-Weaver. *Bull. Brit. Orn. Cl.* 76: 134-135.
- Vesey-FitzGerald, D. & Beesley, J. S. S. 1960. An annotated list of the birds of the Rukwa Valley. *Tanganyika Notes & Recs.* 54: 91-110.
- White, C. M. N. 1963. *A Revised Check list of African Flycatchers, etc.* Department of Game and Fisheries: Lusaka.
- Address:* Dr. M. Louette, Koninklijk Museum voor Midden-Afrika, Tervuren, Belgium.
C. W. Benson, Dept. of Zoology, Cambridge, England.

Birds in west central Libya, 1980-81

by P. J. Cowan

Received 3 August 1981

Bundy (1976) reviewed the literature concerning records of birds in Libya and grouped records into 4 regions delineated by 30°N and 19°E . Published papers listing birds seen in the "Fezzan" region (south of 30°N , west of 19°E) are few. The present paper reports observations of mine made from 15 Sep 1980 to 19 June 1981 at Brak and other localities (Fig. 1) in Bundy's Fezzan.

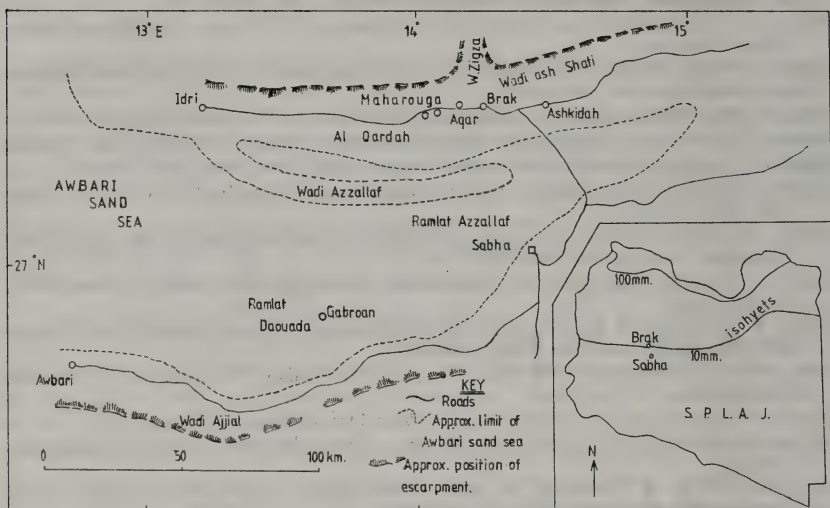


Fig. 1. Map showing Brak and other localities in west central Libya.

The Wadi ash Shati is to the north of an arm of the Awbari Sandsea and contains, amongst others, the settlements of Idri, Maharouga, Brak and Ashkidah. The towns of Awbari and Sabha are in the Wadi Ajjial. Ramlat Azzallaf and Daouada are constituent sandseas in the Awbari Sandsea.

The vicinity of Brak includes palmerie, ditches, dunes, escarpment, stony desert, wadi, part of a giant agricultural project (arable), pools and a stream which is presumably maintained by agricultural drainage. The agricultural project reaches Ashkidah. There are pools at Ashkidah and Maharouga. The vicinity of Sabha includes a lake and a pool. I did not locate the lake at Sabha studied by Erard & Larigauderie (1972), if it still exists. The Ramlat Daouada contains a number of lakes including Gabroan with its associated village.

Observations were mainly made on walks in the vicinity of Brak. All of the places shown in Fig. 1 were visited at least once, except Wadi Azzallaf. In the following list, Bundy's (1976) sequence of species and species check-list number are used for convenience. I also list those species seen by myself,

of each of which the Fezzan status appears reasonably certain on the basis of Bundy's (1976) review and which is not contradicted by my records. As far as possible, spellings of place names in this paper are those of the National Atlas (1978). Bundy's (1976) system of spelling place names was somewhat different, Sabha, Awbari and Idri were spelt Sebha, Oubari, Edri. Throughout the present paper "Fezzan" is used as defined by Bundy (1976).

18. *Egretta garzetta* Little Egret. Maximum seen, c.25 on 26 Sep at Brak. Previously in autumn apparently only singles recorded. Also at Brak, singles 30 Dec and 18 Jan, the first winter records for the Fezzan.

33. *Anas querquedula* Garganey. 6 at Sabha, 27 Mar and 5 there 9 Apr. The first spring records for the Fezzan.

54. *Buteo buteo* Buzzard. Records of a dark-plumage "probable", 8 Nov—3 Mar at Brak. No previous Fezzan records.

57. *Circetus gallicus* Short-toed Eagle. One on 30 May, 1 June and 5 June at Brak. The first definite records for the Fezzan.

58. *Circus aeruginosus* Marsh Harrier. Singles on 6 dates, 17 Oct–14 Nov, also singles 26 Dec and 1 June, all at Brak. 2 at Sabha, 27 Mar and one there 9 Apr. 2 unidentified harriers at Brak, 29 Nov and one there 27 Dec. No previous Fezzan records of harriers Nov, Dec or June.

87. *Fulica atra* Coot. Several at Sabha, 27 Mar and 4 there 9 Apr. The first spring Fezzan records.

88. *Gallinula chloropus* Moorhen. Noted on 9 dates at Brak. In Fezzan a breeding colony has previously been recorded at Sabha so is possibly also resident at Brak.

92. *Rallus aquaticus* Water Rail. One at Brak, 25 Feb. Previously singles on 3 dates in Fezzan, all in April.

103. *Vanellus vanellus* Lapwing. 13 on 16 Dec, 2 on 27 Dec and one on 12 Jan at Brak. The first inland records.

116. *Limosa limosa* Black-tailed Godwit. One at Sabha, 27 Mar. The second record for the Fezzan.

127. *Tringa ochropus* Green Sandpiper. Noted at Brak on 2 dates in Sep, 3 in Oct, 3 in Nov, 3 in Dec, 4 in Jan, 3 in Feb, 5 in Mar and 2 in Apr. Usually 1-2, but 3 and 5 respectively on 2 dates in Oct. Also spring records (3 dates) from Sabha. The winter records are the first for the Fezzan.

129. *Tringa totanus* Redshank. 11 at Sabha, 27 Mar and c. 10 on 9 Apr. Previous Fezzan records are of only 1-2 per day.

130. *Himantopus himantopus* Black-winged Stilt. 9 at Sabha, 27 Mar and one 9 Apr. 17 at Ashkidah, 30 Mar and 2 at Brak, 30 Apr. Previous Fezzan, maximum, 2 birds on any one day.

147. *Larus ridibundus* Black-headed Gull. 2 at Brak, 25 Jan. 16 at Sabha, 27 Mar and 7 there 9 Apr. One unidentified gull at Brak, 26 Dec and 28 Jan, and 2 there 28 Apr. First records of any gull in the Fezzan.

164. *Streptopelia senegalensis* Palm Dove. Several at Maharouga, 7 Mar. 4 at Brak, 25 Apr. First records for the Fezzan.

169. *Asio flammeus* Short-eared Owl. One at Brak, 3 Oct. Second autumn record for the Fezzan.

173. *Caprimulgus aegyptius* Egyptian Nightjar. 4 at Brak, 23 Oct and 2 on 6 Nov. First Fezzan records.

180. *Alcedo atthis* Kingfisher. Singles at Brak, 20 Nov, 30 Dec, 12 Jan and 21 Feb. First Fezzan records.

207. *Riparia riparia* Sand Martin. One at Brak, 8 and 27 Oct. First autumn records for Fezzan, usually Mar-May.

215. *Motacilla cinerea* Grey Wagtail. One at Brak, 6 Nov. Singles only on 3 previous dates in Fezzan.

251. *Sylvia cantillans* Subalpine Warbler. At Brak, 2 on 12 Jan, 5 on 27 Jan, 3 on 19 Feb. 1-2 also seen on 2 dates in each of Mar, Apr (Brak) and Oct (Wadi Zigza). Only one previous winter record for Fezzan.

256. *Sylvia hortensis* Orphean Warbler. One at Brak, 15 Apr. Third Fezzan record.

258. *Sylvia nana* Desert Warbler. One at Brak, 26 Sep. First recorded occurrence in Fezzan outside the southwest.

282. *Saxicola rubetra* Whinchat. Singles at Brak, 22, 27, 29 Sep, 3 and 5 Oct. 1-2 recorded on 5 dates in spring. No previous autumn records for the Fezzan.

283. *Saxicola torquata* Stonechat. One at Brak, 15 Nov. Second record for the Fezzan.

288. *Turdus torquatus* Ring Ouzel. One at Brak, 1 Mar. Second Fezzan record.

297. *Acanthis cannabina* Linnet. About 30 at Brak, 26 Dec. Two previous records, of flocks, in Fezzan.

304. *Rhodopechys githaginea* Trumpeter Finch. 2 at Brak, 25 Feb, 2 and 3 Apr, 11 June. Bundy (1976) comments that there are surprisingly few records for the Fezzan.

307. *Passer hispaniolensis* Spanish Sparrow. Noted 6 Nov-23 Mar at Brak, the largest number recorded being c.1000 on 6 and 8 Nov. Previously not recorded in Fezzan in winter before Jan.

Also recorded:—12. *Ardea cinerea*, 13. *Ardea purpurea*, 14. *Ardeola ralloides*, 20. *Nycticorax nycticorax*, 24. *Plegadis falcinellus*, 26. *Anas acuta*, 56. *Buteo rufinus* (a probable), 60. *Circus macrourus*, 71. *Falco biarmicus*, 80. *Falco tinnunculus*, 97. *Charadrius dubius*, 110. *Calidris minuta*, 112. *Gallinago gallinago*, 121. *Philomachus pugnax*, 125. *Tringa hypoleucos*, 126. *Tringa nebularia*, 165. *Streptopelia turtur*, 172. *Otus scops*, 181. *Merops apiaster*, 186. *Upupa epops*, 188. *Alaemon alaudipes*, 191. *Ammomanes deserti*, 202. *Delichon urbica*, 204. *Hirundo obsoleta*, 206. *Hirundo rustica*, 208. *Anthus campestris*, 209. *Anthus cervinus*, 214. *Motacilla alba*, 216. *Motacilla flava*, 218. *Lanius excubitor*, 221. *Lanius senator*, 225/226. *Ficedula albicollis/semitorquata/hypoleuca* (unseparated), 228. *Muscicapa striata*, 230. *Acrocephalus schoenobaenus*, 243/246. *Phylloscopus*

collybita/trochilus (unseparated), 245. *Phylloscopus sibilatrix*, 250. *Sylvia borin*, 257. *Sylvia melanocephala*, 262. *Turdoides fulvus*, 273. *Oenanthe leucopyga*, 277. *Oenanthe oenanthe*, 308. *Passer simplex*, 317. *Corvus ruficollis*.

References:

- Bundy, G. 1976. *The Birds of Libya*. British Ornithologists' Union: London.
 Erard, C. & Larigauderie, F. 1972. Migration pré-nuptiale dans l'ouest de la Libye. *Oiseau Rev. Fr. Orn.* 42: 81-169, 253-284.
National Atlas of the Socialist People's Libyan Arab Jamahiriya. 1978. Surveying Department, Secretariat of Planning, Tripoli. Arabic/English edition.

Address: Dr. P. J. Cowan, Higher Institute of Technology, Brak, Socialist People's Libyan Arab Jamahiriya.

© British Ornithologists' Club 1982.

On the status of the Green Pheasant

by Derek Goodwin

Received 5 August 1981

The Green Pheasant of Japan was formerly considered a subspecies of the Common Pheasant *Phasianus colchicus* (e.g. Peters 1934). Later (Delacour 1951, 1977, Schwartz & Schwartz 1951, Cramp *et al.* 1980) it was treated as a distinct species, *Phasianus versicolor*.

I recently had occasion to examine the large series of skins of *Phasianus* in the British Museum (Natural History) collection, which includes representatives of all the major groups of subspecies. As a result I believe that *versicolor* is best treated as a subspecies of *P. colchicus*, unless the mainland forms are to be split up into at least 3 different species, a course I do not advocate.

Three subspecies of *P. colchicus* are currently recognised from the Japanese islands, *versicolor*, *robustipes* and *tanensis*. They show only slight differences and 2 of them, *versicolor* and *robustipes*, intergrade. For the present purpose (and possibly for most other purposes too) they can best be, and here will be, all included under the name *versicolor*.

Delacour (1977) treats all the mainland forms as subspecies of *P. colchicus* and shows that they can be divided into 4 or possibly 5 main groups which differ most consistently from each other in the colour of their wing coverts (predominantly brown, white or bluish grey) and their lower backs and rumps (predominantly reddish brown, yellowish olive-green, or a silvery bluish green). As Delacour (1977), who has had extensive experience with these and other pheasants in captivity, points out, there are no known differences of voice or behaviour between any of the forms of *Phasianus*, they all interbreed freely if brought together (even at liberty) by human agency, and their hybrid or mongrel offspring are fully fertile. Nevertheless he thought it was appropriate to give *versicolor* specific rank because of its male being "entirely green on mantle and underparts". He differentiated females of *versicolor* as having the "feathers of the mantle mostly black" as against all mainland forms having them "mostly brown".

Schwartz & Schwartz (1951), in a study of *Phasianus* on Hawaii, where the Chinese Ring-necked Pheasant *P. colchicus torquatus*, the Mongolian Pheasant *P. c. mongolicus* and the Green Pheasant *P. (c.) versicolor* were known to have

been introduced, found some ecological separation, *versicolor*, or phenotypes resembling it, being confined to limited and relatively humid areas. In the "best" *versicolor* habitat, green Pheasants outnumbered ring-necks and (obvious) hybrids by 3 to 2; in other areas where *versicolor* occurred it was outnumbered 4 to 1. They apparently observed no behavioural differences or social segregation.

Thus there is no behavioural evidence to suggest that *versicolor* is less closely related to mainland forms than mainland forms are to each other. Nor, I believe, do the difference in plumage colour warrant such a conclusion. Taking the male of *versicolor* first, the mantle feathers, although they appear all dark green at a little distance, are in fact marked with buff and reddish buff. The scapulars on either side of them are predominantly coppery chestnut. The underparts are entirely dark green or dark bluish green and in this respect *versicolor* does, as Delacour says, differ from mainland races, all of which have some coppery red, chestnut, golden or buff colour at least on the flanks. However, *P. c. elegans*, from the mountains of southwestern Szechuan, northeastern Yunnan and the Shan States of Burma, has most of its underparts dark green like *versicolor*, being coppery red only on the flanks and extreme upper sides of the lower breast. *P. c. suetschanensis*, from northwestern Szechuan and eastern Tibet also has the underparts largely dark green but less extensively so than *P. c. elegans*. Also one of the white-winged subspecies, *P. c. bianchii*, has its entire breast predominantly blackish green, owing to very broad borders of this colour on the feathers.

Thus although the male *versicolor* looks very different from the richly coppery red and golden males of the forms geographically nearest to it, namely *P. c. torquatus* from eastern China and *P. c. karpowi* from Korea, it looks not at all unlike *P. c. elegans*. If, therefore, we consider *versicolor* in relation to the plumage characters—colour of wing coverts and rump—on which Delacour separates his mainland groups of subspecies then we see that it agrees in this point with the grey-winged, silvery bluish green-rumped group, which includes, *inter alia*, its geographically nearest congeners. In more detail, its wing coverts nearly match those of *P. c. elegans* and its rump colouration is very like that on some specimens of *P. c. torquatus*. Its tail feathers also (another point on which there are differences between the main groups of subspecies) are very like those of *P. c. torquatus* except for having a sprinkling of dark dots between the black transverse bars and lacking any definite indication of reddish bars on the purplish-brown outer fringes of the central feathers.

In the case of the female *versicolor* I think that Delacour has rather over-emphasised the relative darkness of this form. As with other forms of *Phasianus*, there is an appreciable amount of individual variation and, through abrasive loss of part of the lighter parts of individual feathers, birds in worn plumage look markedly darker than newly-moulted specimens. When allowance is made for plumage state, some female *versicolor* differ from some specimens of *P. c. torquatus* and from most of our specimens of *P. c. elegans* only in having the pale buff areas of the feathers of the underparts speckled (some very lightly, some heavily) with small spots of blackish drab. Some specimens of *versicolor* are admittedly very dark but others are actually lighter in appearance than most of our females of *P. c. elegans*.

It seems probable that in *Phasianus*, as in many other species of birds, an increase of dark plumage pigmentation is correlated with a more humid environment. This may account for the over-all similarity in both sexes of *versicolor* and *elegans* being greater than that between *versicolor* and *torquatus* or *karpowi*, which are nearest to it geographically.

In conclusion, there seem no good grounds for treating *versicolor* as a full species on its plumage characters and as there are not, so far as is known, any other characters in which it differs from mainland forms, it is best treated as conspecific with them.

Two other points resulting from the examination of all the British Museum (Natural History) *Phasianus* specimens seem worth brief mention here. Delacour (1951, 1977) has lucidly explained the incorrectness of the widespread idea that the "melanistic mutant", *P. colchicus* var. *tenebrosus*, originated from hybridisation of *versicolor* with other subspecies. Since some authorities still appear to doubt this, it may be said that, in my opinion, the B.M. specimens, which include very many examples of the dark mutant and some genuine crosses between *versicolor* and other forms, confirm Delacour's views.

Secondly, it is clear that many pheasants which sportsmen have shot or aviculturists kept in Britain, and which they have thought to be specimens of *P. c. torquatus* or *P. c. formosanus*, in fact differ markedly from wild examples of these subspecies, particularly in their having the upper parts of their plumage more *uniformly* light in ground colour, and in showing much less contrast between the feathers of the flanks and those of the lower breast.

References:

- Cramp, S. *et al.* (1980). *Handbook of the Birds of Europe, the Middle East and North Africa*. Vol. 2. Oxford University Press.
- Delacour, J. 1951. *The Pheasants of the World*. Country Life.
- 1977. *The Pheasants of the World*. 2nd ed. Saiga Publishing Co: Surrey.
- Peters, J. L. 1934. *Check-list of Birds of the World*. Vol. 2. Harvard University Press.
- Schwartz, C. W. & Schwartz, E. R. 1951. An ecological reconnaissance of the Pheasants in Hawaii. *Auk* 68: 281-314.
- Address: D. Goodwin, British Museum (Natural History), Tring, Herts. HP23 6AP, England.

© British Ornithologists' Club 1982.

The natal pterylosis of *Manacus manacus* (Pipridae)

by Charles T. Collins

Received 26 August 1981

The manakins (Pipridae) are a familiar part of the avifauna of many parts of the Neotropics. Even so, the only information on the natal pterylosis of these subossine birds is confined to unquantified accounts of 5 species. Newly hatched young of *Pipra coronata*, *P. mentalis*, *Manacus aurantiacus* and *Chiroxiphia linearis* are reported to have scant or sparse grey or greyish-tan

downs (Skutch 1969, Foster 1976) while *Schiffornis turdinus* has "copious long brownish grey down, more abundant than that on the nestlings of the majority of passerine birds" (Skutch 1969: 155). This paper, part of a continuing analysis of the natal pterylosis of Neotropical passerines (Collins 1963, 1973, Collins & Kemp 1976, Collins & Bender 1977), presents data on 3 nestlings of the Black and White Manakin *Manacus manacus*.

All 3 specimens were collected by me in St. George County, Trinidad; 2 (specimens A & B) were taken from a nest in Arima Valley on 17 June 1963 and one (specimen C) from a nest in Aripo Valley on 22 June 1964. All 3 were very small nestlings no more than a day or two old (Stage A, see Wetherbee 1957: 356) with only a light covering of light brownish grey neossophtiles. The total number of neossophtiles varied from 105 to 175 distributed in 10 or 11 tracts (Table 1). As noted in the earlier studies, there is considerable intraspecific variation in neossophtile numbers. In this case it is due in large part to the greatly reduced neossophtiles on the ventral tract and rectrices of specimen C; specimens A and B show much closer agreement in number and distribution of downs.

TABLE 1
Distribution of neossophtiles in *Manacus manacus*

Tract	Specimen A	Specimen B	Specimen C
Ocular	10/11*	7/9	6/6
Coronal	11/10	11/10	9/9
Post Auricular	0/1	0/0	0/0
Occipital	3/4	5/5	4/4
Spinal (upper)	10/9	8/8	8/8
Spinal (lower)**	4	6	4
Scapular	14/14	14/16	10/10
Femoral	8/8	8/9	6/5
Ventral	12/9	10/8	2/1
Rectrices	6/6	6/6	1/1
Greater Secondary Coverts	6/8	4/4	5/3
Middle Secondary Coverts	6/5	3/6	2/0
Lesser Secondary Coverts	0/0	0/0	1/0
Totals	175	163	105

*counts from left/right sides

**unpaired portion of tract located on midline

The pattern of neossophtile distribution illustrated here may be representative for some of the more "typical" manakins of the genera *Manacus*, *Pipra* and *Chiroxiphia*. However, this pattern cannot be considered to be

typical of the Pipridae as a whole as it is appreciably different from that reported for the Thrush-like Manakin *Schiffornis turdinus* (Skutch 1969). Detailed observations of the natal pterylosis of this and other genera such as *Sapayoa*, *Tyrannetes* and *Neopelma* would likely provide valuable data and aid in our understanding of the relationships of this diverse family of birds.

Acknowledgements: Kristen Bender was of great assistance in making the neossoptile counts presented here.

References:

- Collins, C. T. 1963. The natal pterylosis of tanagers. *Bird-Banding* 34: 36-38.
 — 1973. The natal pterylosis of the Swallow-tanager. *Bull. Brit. Orn. Cl.* 93: 155-157.
 — & Kemp, M. H. 1976. Natal pterylosis of *Sporophila* finches. *Wilson Bull.* 88: 154-157.
 — & Bender, K. E. 1977. Cervical neossoptiles in a Neotropical passerine. *Bull. Brit. Orn. Cl.* 97: 133-135.
 Foster, M. S. 1976. Nesting biology of the Long-tailed Manakin. *Wilson Bull.* 88: 400-420.
 Skutch, A. F. 1969. Life histories of Central American birds. III. *Pacif. Coast Avif.* 36: 1-580.
 Wetherbee, D. K. 1957. Natal plumages and downy pteryloses of passerine birds of North America. *Bull. Am. Mus. Nat. Hist.* 113: 339-436.
Address: Dr. Charles T. Collins, Department of Biology, California State University, Long Beach, California 90840, U.S.A.

© British Ornithologists' Club 1982.

Occurrence of the Lesser Adjutant Stork *Leptoptilos javanicus* on Bali, Indonesia

by Murray D. Bruce

Received 19 September 1981

In the most recent summary of the geographical distribution of storks, Kahl (1979: 252) did not list the Lesser Adjutant Stork *Leptoptilos javanicus* from Bali. Stresemann (1913: 332) reported a sight record from western Bali that was given to him by a tiger hunter, but Chasen (1935: 54) later questioned Bali as a locality. In the late afternoon of 6 September 1980 I observed one foraging on the reef platform and adjacent beach area of the Bali Barat Nature Reserve, northwestern Bali. I followed it closely for 300 metres until it flew off to roost in a large tree nearby.

This stork was first recorded from east Java by Hoogerwerf (1948a: 48) in the Baluran National Park (cf. Wind & Amir 1977: 75) and is probably the most numerous of the 3 storks recorded in west Java (Hoogerwerf 1948b: 121; 1969: 54). There are now a number of records from east Java east to Banyuwangi, opposite Bali (D. A. Holmes), and its presence on Bali would not be unexpected, as evidenced by June 1981 observations from north Bali reported to me by V. Mason and J. L. McKean severally.

A review of the status elsewhere in Indonesia revealed the following:—*Sumatra*. Most of the limited museum material is from last century, but there have been recent records (D. A. Holmes). *Bangka*. Not mentioned by Kahl, but it has been collected there (G. F. Mees). *Kalimantan* (Indonesian Borneo).

Not indicated from this part of Borneo by Smythies (1968: 137), but during the 1930's it was protected there by law and there were a few scattered records, particularly from the south and east, including a specimen from Rantau (G. F. Mees) as well as one recently observed at Banjarmasin (D. A. Holmes). Dr. G. F. Mees kindly provided additional details for Kalimantan: "... in the 1930's prosecutions took place in Pontianak for the illegal keeping of these birds. It is very unlikely that these would have been other than local birds"; and for records in south and east Kalimantan: he states that these storks and ibises have not been reported from coastal areas but mostly along the large rivers (in E. Borneo from Mahakam, Belajan, Kedang Rantan and Telen).

I concur with the conclusion reached by D. A. Holmes that this stork is widely distributed in these islands, and not uncommon in suitable localities, although in very small numbers.

Acknowledgements: I thank E. C. Dickinson, I. C. J. Galbraith, D. A. Holmes, V. Mason, J. L. McKean, and especially G. F. Mees for discussions and assistance with enquiries on this stork.

References:

- Chasen, F. N. 1935. A handlist of Malaysian birds. *Bull. Raffles Mus.* 11: xx + 389 pp.
- Hoogerwerf, A. 1948a. Het Wildreservaat Baloeran. *Tectona* 38: 33-49.
- 1948b. Contribution to the knowledge of the distribution of birds on the island of Java. *Treubia* 19: 83-137.
- 1969. On the ornithology of the Rhino Sanctuary, Ujung Kulon in west Java (Indonesia). *Nat. Hist. Bull. Siam Soc.* 23: 9-65.
- Kahl, M. P. 1979. Family Ciconiidae. In E. Mayr & G. W. Cottrell (editors), *Check-list of Birds of the World*. Vol. 1, 2nd ed. pp. 245-252. *Mus. Comp. Zool.* Cambridge.
- Smythies, B. E. 1968. *The Birds of Borneo*. 2nd ed. Edinburgh: Oliver & Boyd.
- Stresemann, E. 1913. Die Vögel von Bali. *Novit. Zool.* 20: 325-387.
- Wind, J. & Amir, H. 1977. Proposed Baluran National Park. Management Plan 1978-1982. Bogor: UNDP/FAO Nature Conservation and Wildlife Management Project INS/73/013. Field Report 4: iv + 100 pp.

Address: Murray D. Bruce, 8 Spurwood Road, Turramurra, NSW 2074, Australia.

© British Ornithologists' Club 1982.

IN BRIEF

Juvenal plumage of the White-throated Thicket-flycatcher *Pachycephalopsis poliosoma*

The New Guinea genus *Pachycephalopsis* (Pachycephalidae) consists of 2 species, the Green Thicket-flycatcher *P. battamensis* and the White-throated Thicket-flycatcher *P. poliosoma*. The former is considered rare, but the latter, though relatively common, is shy and retiring and little is known about its life history. Not even the juvenal plumage of *P. poliosoma* appears to have been previously described and the following description is of a specimen in the collection of the American Museum of Natural History, New York (AMNH 341453, male, Balim River, 13 December 1938).

This is the only juvenal specimen in the AMNH series. It has not undergone its first prebasic moult. The crown, mantle, back, rump and tail are uniformly dark olive-brown. Lores are very dark blackish-brown. The chin is white. The throat, breast and flanks are brown. Feathers of the belly are off-white, becoming darker towards the tips, which have light brown terminal edges, giving a slightly mottled appearance. The undertail coverts are tan. Wings are dark olive-brown without paler edging to the coverts or remiges. Overall, this juvenal plumage resembles a dark version of the *Pachycephala*- and *Poecilodryas*-type.

No soft part colours are given on the label but M. LeCroy (*in litt.*) gives the following description: "from the skin it appears that the bill was quite dark with yellow at the gape and on the upper edge of the lower mandible at the base. The legs and feet appear as though they were yellowish or fleshy, much lighter than in the adult".

There are no juvenals of *P. hattamensis* in the AMNH collection; none has yet been described.

Acknowledgements: I wish to thank Mary LeCroy for the information on the soft part colours. While at the American Museum of Natural History my work was supported by a Frank M. Chapman Memorial Grant.

19 August 1981

Walter E. Boles

Address: Department of Ornithology, Australian Museum, 6-8 College Street, Sydney, N.S.W. 2000, Australia.

© British Ornithologists' Club 1982.

Golden Eagle *Aquila chrysaetos* breeding in Oman, eastern Arabia

The breeding of the Golden Eagle *Aquila chrysaetos*, only once previously reported anywhere in Arabia, was proved in the Sultanate of Oman, eastern Arabia, by the discovery (by MRB) of 2 downy chicks, 2-3 weeks old, on a tree nest in the central desert region on 21 January 1981. On 8 February 1981 MDG found one chick in a second nest about 110 km to the southwest, where MRB had seen 2 fledged young perched above the same nest on 3 April 1980 (MDG & MRB *in press*, *Sandgrouse*).

In the first nest one chick was seen being harried by its sibling and was found dead on 30 January (P. Harris pers. comm.), the survivor fledging on 4 March. A backward projection (R. F. Porter *in litt.*) suggests the cycle: courtship and nest-building late September to early November, first egg laid very approximately 18 November, first chick hatched very approximately 1 January. From these and our other sightings in 1980-81, and from 4 other unoccupied nests, *A. chrysaetos* would appear to be a scarce breeding resident in the desert and semi-desert of Oman, wherever there are suitable trees (such as *Prosopis cineraria*) and prey (mostly hare *Lepus capensis*).

The only other published report of the Golden Eagle breeding in the Arabian Peninsula was of one chick and one egg (75 × 60 mm) removed from a cliff nest near Jeddah, SW Saudi Arabia, on 6 February 1948 (Meinertzhagen (1949), *Ibis* 91: 465-482; G. B. Popov *in litt.*). Popov's

photograph of 12 March 1948 shows the chick about 6 weeks old (R. F. Porter *in litt.*). M. P. Walters (pers. comm.) recently re-examined one of the 2 eggs collected by B. Thomas (1931, *Geogr. J.* 78: 209-242) from a tree nest in the Hadh Muzariq sands of the Empty Quarter of Saudi Arabia at about 20°44'N, 51°30'E in mid-January, and considers that at 77.4 x 55.9 mm it is too big for Abyssinian Tawny Eagle *A. r. raptor*, as suggested by Kinnear (1931, *Ibis* (13)1: 698-701), and, excluding Imperial Eagle *A. belia* on account of the latter's more northerly breeding range, it is almost certainly an egg of the Golden Eagle, apparently the first evidence of breeding in Arabia.

Regarding distribution elsewhere, M. C. Jennings, who kindly gave us details of his researches for 'The Birds of Saudia Arabia: a Check-list' (1981), considers the species to be a rare breeding resident in Hejaz and Northern Hejaz. In North Yemen, Thiollay & Duhautois reported display and they suspected breeding (*Oiseau* 46(3), 1976: 261-271). In Sinai a chick was removed from a cliff nest on 4 March 1927 (Meinertzhagen (1930), *Nicoll's Birds of Egypt*, Vol. 2: 385). In Israel in 1981 there were about 15 pairs (Y. Leshem *in litt.*). This evidence supports the probability that the Golden Eagle is a scarce resident breeder in the desert and semi-desert of Arabia.

10 December 1981

M. D. Gallagher

Address: Office for Conservation of the Environment, PO Box 246, Muscat, Sultanate of Oman.

M. R. Brown

Address: 'Keven', Tytherington, Wotton-under-edge, Glos.

© British Ornithologists' Club 1982.

BOOKS RECEIVED

Mackworth-Praed, C. W. & Grant, C. H. B. 1981. *African Handbook of Birds*. Series 2. *Birds of the Southern Third of Africa*, Vols. 1 & 2, with Publisher's note and a Biography of the authors. Longman: London. Vol 1. Pp. i-xxvii, 1-661 + Index. £30. Vol. 2. Pp. i-x, 1-712 + Index. £30. Series 3. *Birds of West Central and Western Africa*, Vols. 1 & 2, with Publisher's note and a biography of the authors. Longman: London. Vol. 1. Pp. i-xxxii, 1-639 + Index. £30. Vol. 2. Pp. i-x, 1-774 + Index. £30.

Welcome reprints of the 1962/63 and 1970/73 original editions respectively of these classical volumes, together with their coloured and other illustrations. Series 1 is noticed in *Bull. Brit. Orn. Cl.* 100(3): 206.

Elgood, J. H. 1981. *The Birds of Nigeria*—an annotated check-list. Pp. 1-246. British Ornithologists' Union, c/o Zoological Society, Regent's Park, London NW1 4RY. £14 (£10 to members).

The fourth in the series of avifaunal lists being published by the BOU. 831 species are treated, each being given its status and preferred habitat, distribution and movements, and breeding dates if known. The introductory chapters include a review of past literature and discuss the Nigerian environment, migration (Palaeartic and intra-African), breeding seasons and other subjects. There are 4 Appendix analyses, a gazetteer, a comprehensive list of references and indices of genera and of English names.

NOTICE TO CONTRIBUTORS

Papers, whether by Club Members or by non-members, should be sent to the Editor, Dr. J. F. Monk, The Glebe Cottage, Goring, Reading RG8 9AP, and are accepted on the understanding that they are offered solely for publication in the *Bulletin*. They should be typed on one side of the paper, with double-spacing and a wide margin, and submitted with a *duplicate copy on airmail paper*.

Scientific nomenclature and the style and lay-out of papers and of References should conform with usage in this or recent issues of the *Bulletin*, unless a departure is explained and justified. Photographic illustrations, although welcome, can only be accepted if the contributor is willing to pay for their reproduction.

An author wishing to introduce a new name or describe a new form should append *nom.*, *gen.*, *sp.* or *subsp. nov.*, as appropriate, and set out the supporting evidence under the headings "Description", "Distribution", "Type", "Measurements of Type" and "Material examined", plus any others needed.

A contributor is entitled to 10 free reprints of the pages of the *Bulletin* in which his contribution, if one page or more in length, appears. Additional reprints or reprints of contributions of less than one page may be ordered when the manuscript is submitted and will be charged for. Authors may be charged for proof corrections for which they are responsible.

BACK NUMBERS OF THE BULLETIN

Available on application to Dr. D. W. Snow, British Museum (Natural History), Tring, Herts, as follows: 1981 (Vol. 101) £3 each issue, 1980 (Vol. 100) No. 1 £4. No. 2, 3 & 4 £2 each, 1973-1979 (Vols. 93-99) £2 each issue (4 per year), 1969-72 (Vols. 89-92) £1.50 each issue (6 per year), before 1969 £1.00 each issue (generally 9 per year); Indices: Vol. 70 and after £1 each, Vols. 50-69 £2 each and Vol. 49 and before £4 each. Long runs (at least 10 years) for Vol. 50 and after are available at reduced rates on enquiry, but higher price may otherwise be charged for numbers that are scarce or have been specially reprinted. Orders over £50 are post free.

MEMBERSHIP

Only Members of the British Ornithologists' Union are eligible to join the Club: applications should be sent to the Hon. Treasurer, Mrs. D. Bradley, 53 Osterley Road, Isleworth, Middlesex, together with the current year's subscription. The remittance and all other payments to the Club should always be in *sterling* unless an addition of £1.00 is made to cover bank charges for exchange, etc. Payment of subscription entitles a Member to receive all *Bulletins* for the year. Changes of address and revised bankers' orders or covenants (and any other correspondence concerning Membership) should be sent to the Hon. Treasurer as promptly as possible.

SUBSCRIPTION TO BULLETIN

The *Bulletin* may be purchased by non-members on payment of an annual subscription of £13.00 (postage and index free). Send all orders and remittances in sterling, unless an addition of £1.00 is made to cover bank charges, to the Hon. Treasurer. Single issues may be obtained as back numbers (see above).

CORRESPONDENCE

Correspondence about Club meetings and other matters not mentioned above should go to the Hon. Secretary, R. E. F. Peal, 2 Chestnut Lane, Sevenoaks, Kent TN13 3AR.

Bulletin of the
British Ornithologists' Club



Edited by
Dr. J. F. MONK



FORTHCOMING MEETINGS

Tuesday, 22 June 1982 Dr T. J. Seller on *Are Bullfinches and Fruit Crops really incompatible?* Full information about this Meeting was published in the *Bulletin* Vol. 102 No. 1.

Tuesday, 20 July 1982 in the Staff Dining Room, first floor, Sherfield Building, Imperial College, Exhibition Road, S.W.7 at 6.30 p.m. for 7 p.m. (The Sherfield Building is in the main block of Imperial College, on the **west** side of Exhibition Road.) Mr T. M. Gullick, who has lived in Spain for a number of years, will speak on *Birds in central Spain*. Those wishing to attend should send their acceptance with a cheque for £5.70 a person to the **Hon. Treasurer** at 53 Osterley Road, Isleworth, Middlesex TW7 4PW (telephone 01-560 1019) to arrive not later than first post on Thursday, 15 July.

Tuesday, 21 September 1982 in the Senior Common Room, South Side, Imperial College, Prince's Gardens, S.W.7 at 6.30 p.m. for 7 p.m. Dr David Houston, Hon. Secretary of the B.O.U., will speak on *Vultures*, on which he is an authority. Those wishing to attend should send their acceptance with a cheque for £5.90 a person to the Hon. Secretary at 2 Chestnut Lane, Sevenoaks, Kent TN13 3AR (telephone Sevenoaks (0732) 450313) to arrive not later than first post on Thursday, 16 September.

Saturday, 16 October 1982 A visit at 10.30 a.m. to the **Harrison Zoological Museum**, Bowerwood House, St Botolph's Road, Sevenoaks (close to the station), with its notable collection of mounted birds and of skins, founded by the late Dr James Harrison. After a buffet lunch, the **Sevenoaks Experimental Wildfowl Reserve**, created by the late Dr Jeffery Harrison, will be visited. Those wishing to attend should send their acceptance on the enclosed slip with a cheque for £3.30 a person for lunch to reach the Hon. Secretary not later than first post on Wednesday, 13 October. It may be necessary to limit the number who can be accommodated at the Museum.

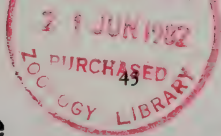
Tuesday, 23 November 1982 at Imperial College at 6.30 p.m. for 7 p.m. Dr A. W. Diamond will speak on *The Birds of the Western Indian Ocean Islands*.

Volume 48 of the *Bulletin*, out of print for many years, has now been reproduced and copies are available: single numbers £2 each, index £4 with a special price of £20 for the whole volume.

COMMITTEE

D. R. Calder (*Chairman*)
R. E. F. Peal (*Hon. Secretary*)
Dr. J. F. Monk (*Editor*)
R. A. N. Croucher
P. J. Conder, O.B.E.

B. Gray (*Vice-Chairman*)
Mrs. D. M. Bradley (*Hon. Treasurer*)
J. G. Parker
Revd. G. K. McCulloch, O.B.E.



Bulletin of the BRITISH ORNITHOLOGISTS' CLUB

Vol. 102 No.2

Published: 18 June 1982

The Annual General Meeting of the British Ornithologists' Club was held at Imperial College, London, S.W.7 on Tuesday, 18 May, 1982 at 6 p.m. with Mr D. R. Calder in the Chair. Twelve Members were present.

The Minutes of the Annual General Meeting held on 19 May 1981 (*Bull. Brit. Orn. Cl.* 101:273) were approved and signed by the Chairman.

The Report of the Committee for 1981 was presented by the Hon. Secretary and the Accounts for 1981 were presented by the Hon. Treasurer. The Hon. Treasurer explained that the major increases in income were in subscriptions, thanks mostly to increases in the numbers of Members and of non-member *Bulletin* subscribers resulting from the dispatch of leaflets as journal inserts and by direct mailing, and in *Bulletin* back number sales, arising from the reprinting of back numbers in 1980 and the despatch of publicity leaflets in 1981. As regards expenditure, the absence of an increase in printing charges in 1981 had made it possible to publish more pages in the *Bulletin* than had been planned. In view of the special factors involved, a surplus of income over expenditure of the same size could not be expected in 1982. On the proposal of Mr J. H. Elgood, seconded by Mr P. J. Conder, it was resolved unanimously that the Report of the Committee for 1981 and the Accounts for 1981 be received and adopted.

As regards the *Bulletin*, the Editor reported that the backlog of papers, which had arisen when Vol. 100 No. 1 had been devoted to invited contributions, had now been cleared and that papers were again published within six to nine months of acceptance.

There being no nominations additional to those of the Committee, the following were declared duly elected:—

Hon Treasurer: Mrs D. M. Bradley (re-elected).

Non Secretary: Mr R. E. F. Peal (re-elected)

Committee: Mr P. J. Conder, O.B.E. (*vice* Mr R. D. Chancellor, who retired by rotation and was ineligible for re-election).

The Meeting closed at 6.22 p.m.

The seven hundred and thirty-eighth Meeting of the Club was held in the Senior Common Room, South Side, Imperial College, London, S.W.7 on Tuesday, 2 March, 1982 at 7 p.m. The attendance was 22 Members and 12 guests.

Members present were: D. R. CALDER (*Chairman*), K. F. BETTON, Dr G. BEVEN, Mrs DIANA BRADLEY, R. D. CHANCELLOR, P. J. CONDER, J. H. ELGOOD, Dr C. H. FRY, A. GIBBS, B. GRAY, D. GRIFFIN, M. C. HODGSON, Dr A. G. KNOX, Revd. G. K. McCULLOCH, Dr J. F. MONK, P. J. OLIVER, J. G. PARKER, R. E. F. PEAL, Dr D. W. SNOW, S. A. H. STATHAM, C. E. WHEELER and C. R. WOOD.

Guests present were: Miss M. BARRY, Mrs G. BEVEN, K. D. BISHOP, Miss SARAH CONDER, Mrs I. McCULLOCH, Mrs DIANA MONK, Mrs P. J. OLIVER, Professor GORDON H. ORIAN and Mrs BETTY ORIAN, N. PICOZZI, Mrs B. K. SNOW and one other guest.

Professor Gordon H. Orians gave an address of great interest on Mates and Real Estate in Blackbird Social Systems. He described some of the work which he and his students had undertaken on icterid blackbird ecology, behaviour and breeding biology and the considerable increase in knowledge that it had produced.

The seven hundred and thirty-ninth Meeting of the Club was held in the Senior Common Room, South Side, Imperial College, London, S.W.7 on Tuesday, 18 May, 1982 at 7 p.m. The attendance was 23 Members and 6 guests.

Members present were: D. R. CALDER (*Chairman*), K. F. BETTON, Mrs DIANA BRADLEY, P. J. CONDER, R. A. N. CROUCHER, J. H. ELGOOD, C. P. GALEY, B. GRAY, M. C. HODGSON, P. HOGG, J. KING, Dr A. G. KNOX, Revd. G. K. McCULLOCH, Dr J. F. MONK, J. G. PARKER, R. E. F. PEAL, Dr T. J. SELLER, Prof. G. H. N. SETON-WATSON, M. P. WALTERS, R. J. WATLING, C. E. WHEELER, C. R. WOOD and M. W. WOODCOCK.

Income and Expenditure Account for the year ended 31st December 1981

	1981	1980	
INCOME	£	£	£
SUBSCRIPTIONS RECEIVED			
Members Subscriptions	2,189	1,887	
Subscribers	2,506	1,314	
	4,695		3,201
DONATIONS RECEIVED			
Investment Income		101	111
General Fund	686	592	
Trust Fund	42	34	
	728		626
RENT RECEIVED			
Property "Clovelly" Tring	936	593	
Less: Repairs and Insurance	37	111	
	899		482
INCOME TAX RECOVERED			
Deeds of Covenant	206	189	
Other	15	15	
	221		204
SALES OF BULLETIN—BACK NUMBERS			
MEETINGS—Income	1,107	1,361	201
Expenditure	1,094	1,345	
	13		16
	7,676		4,841
EXPENDITURE			
Printing and Publication of Bulletin	4,102	5,279	
Printing Back Numbers	115		
Separates	261		
	4,478		
Less: Authors Costs	532		
Amounts transferred from Bulletin Fund	427	1,160	
	532	1,587	
Postage of Bulletin	3,946	3,692	
	361	350	
	4,307	4,042	
PUBLICATION AND DISTRIBUTION COST OF BULLETIN			
Publicity Expenditure	315		
Printing, Postage and Stationery	400	298	
Telephone	33	26	
Insurance	20	20	
Notice of Meeting	35	27	
Legal Charges (appointment of Trustee)		38	
Audit and Accountancy Charges	75	60	
Bank Charges	3	22	
Miscellaneous Expenditure	47	36	
Depreciation: Projector and Screen		10	
	5,235		4,199
			£=441

Balance Sheet as at 31st December, 1981

	1981	1980	
GENERAL FUND	£	£	£
Balance at 31st December 1980		2,611	
Add: Excess of Income over Expenditure		2,441	
		5,052	2,611
BULLETIN FUND			
Balance at 31st December 1980			1,160
Less: Amounts transferred and deducted from printing and publication of bulletin			1,160
TRUST FUND			
F. J. F. BARRINGTON LEGACY			
Balance at 31st December 1980		445	445
STEVENS BEQUEST FUND		100	
		£5,597	£3,056
Represented by:—			
GENERAL FUND INVESTMENTS			
£100 84% Treasury Loan 1980/82 at cost		100	100
Less: Reserve brought forward		20	20
			80
TRUST FUND INVESTMENTS			
£880 14% Treasury Stock 2008/12 at cost			445
			445
CURRENT ASSETS			
Stock of Bulletin—Nominal Value		1	1
Cash at Banks—Current Account		45	812
—Post Office Giro Account		77	78
—Deposit Account		2,134	1,284
—National Savings Bank		5,667	3,105
		7,924	5,280
Less: CURRENT LIABILITIES			
Subscriptions received in advance—Members		322	217
—Subscribers		1,249	1,459
Sundry Creditors		1,281	859
Rent received in advance			234
		2,852	2,749
NET CURRENT ASSETS			2,531
		£5,597	£3,056

ACCOUNTANTS' CERTIFICATE
 We have prepared the attached Balance Sheet as at 31st December 1981 and Income and Expenditure Account for the year ended on that date from the books, vouchers and information presented to us and certify that they are in accordance therewith.
 29A Bridge Street,
 Pinner, Middlesex 28th April 1982
SEARLE INSKIP FREED & CO.
 Chartered Accountants

We approve the attached Balance Sheet as at 31st December 1981 and Income and Expenditure Account for the year ended on that date and confirm that to the best of our knowledge all transactions relating to the Club have been recorded.
DAVID R. CALDER Chairman

Guests present were: Miss D. BURGESS, A. C. ELEY, Mrs I. McCULLOCH, Dr AMICIA MELLAND, Mrs M. H. SETON-WATSON and T. A. H. SLACK.

Mr P. J. Conder spoke on Some Wetlands in Sind. He described areas which he had studied whilst preparing management plans for the World Wildlife Fund and gave details of the vast numbers of wildfowl and other birds present. He also explained the difficulties encountered in the conservation of birds there. His talk was illustrated with excellent slides.

A new race of the Spotted Ground Thrush *Turdus fischeri* from South Sudan

by G. Nikolaus

Received 19 January 1982

During my 3-year study of the Imatong Mountains in South Sudan, I collected in the Lotti Forest (4° 03' N, 32° 32' E), on the southwestern slopes of the mountains, a single specimen of *Turdus fischeri*. I propose to name it:—

Turdus fischeri *maxis* subsp. nov.

Diagnosis: Differs generally from all other named races, and from a specimen from Upemba, southern Zaire, in its much darker and browner upperparts, and in being shorter winged (see Table 1). Further differences are: primary and secondary coverts blackish brown, contrasting with mantle; primary covert feathers each only with a small buff spot, instead of a broad light band in all other specimens examined; spotting of breast and flanks more heavily pronounced, the individual spots larger, almost jet black, only a little unspotted white on centre of belly; first (outer) primary in relation to total wing-length longer (details in Table 1) and broader.

Distribution: So far only known from the type locality, the Lotti Forest, where this one bird was caught on the first of 3 days mist-netting in virgin tropical lowland forest. This subspecies is isolated by 1200 km from *T. f. fischeri* on the Kenya coast, 2200 km from *T. f. belcheri* in southern Malawi, 1600 km from the unnamed Zaire form, and 3500 km from *T. f. natalicus* in South Africa.

Type: Subadult female (age about 6 months, head, tail and wing coverts still partly in immature plumage, collected in the Lotti Forest, Imatong Mts, South Sudan, at an elevation of 1250 m, 11 October 1979; in Naturkundemuseum Stuttgart, no. 58038.

Measurements and weight of type: Wing 108 (live bird, 110), tail 88, tarsus 34, culmen from base 24 mm, weight 62 g.

Further material examined:

T. f. fischeri: Sokoke Forest, Kenya. ad. ♀, 23.4.70; 2 ad. ♂♂, 2 ad. ♀♀, May 1966.

T. f. belcheri: Thyolo (Cholo) Mt., Malawi. ad. ♀, 21.9.51.

T. f. subsp.: Upemba, Zaire. ad. ♀, 7.10.73.

T. f. natalicus: Cape Prov., South Africa. 2 ad. ♂♂, 8 ad. unsexed.

All in British Museum (Natural History), Tring, except for the Zaire specimen, in Koninklijk Museum voor Midden-Afrika, Tervuren, and 3 *T. f. fischeri* in the National Museum of Kenya, Nairobi.

Remarks: The Imatong bird is named after our son Max.

Turdus fischeri is a rare bird of forests in eastern and southern Africa. The

Table 1
Measurements (mm) to show variations in wing-length and wing-formula in *Turdus fischeri*.

Wing (W)	Primary measurements (P)						$X = \frac{P \times 100}{W}$		
	1p†	1p/2p*	2p†	1p/4p*	4p†	ip	1p/2p	2p	1p/4p
<i>maxis</i>	30	40	70	48	78	27.8	37.0	64.8	44.4
Zaire subsp.	28	47	75	57	85	25.0	42.0	67.0	50.9
<i>belcheri</i>	26	54	80	66	92	21.6	45.0	66.7	55.0
<i>natalicus</i>	25.5	53.7	79.2	65.1	90.6	21.5	45.0	66.3	54.5
(n = 10)	(20-29)	(50-56)	(76-83)	(61-69)	(88-95)	(17.5-23.2)	(42.7-48.3)	(64.5-68.6)	(52.0-59.0)
<i>fischeri</i>	23.8	55.0	78.8	64.0	87.8	21.1	48.9	70.0	56.9
(n = 4)	(23-24)	(51-58)	(75-82)	(60-67)	(84-91)	(20.4-22.2)	(47.2-50.0)	(69.4-70.7)	(55.6-57.8)

† = all these measurements are from the base of the first (outermost) primary to the tip of primary 1, 2 and 4 (wing tip).

* = difference from tip of first primary to tip of primary 2 or 4.

2 coastal races are known to be migratory, but the inland populations seem to be more sedentary, although it is very likely that the Imatong birds have local seasonal vertical movements. Benson & Benson (1975) suggest that *belcheri* is "probably resident", but Benson (pers. comm.) points out that they only knew of records for September and November (egg-laying in November). There is now also a record for 31 August (Douglas 1978). Benson feels that the situation in Malawi needs further investigation, especially as the figures in Table 1 for *belcheri* are similar to those for the migratory *natalicus* (see further below); but *belcheri* may at least show local vertical movements. From the age of the specimen of *maxis*, I would expect breeding at the start of the rains, in April, which is the opposite time of year to Malawi, south of the Equator, where the rains start in October or November.

The measurements in Table 1 indicate variations in the overall wing-length and (no less importantly) in the wing-formula of the species, even although unfortunately the only populations represented by more than one specimen are the coastal *natalicus* and nominate *fischeri*. That these 2 coastal populations are migratory is probably due to seasonal changes in habitat. Both show a tendency to long, pointed wings, most pronounced in *fischeri*, whose breeding grounds are still unknown. The wings of the evidently more strictly sedentary inland populations tend to be shorter and rounder, with an extreme in *maxis* of the Imatongs. According to the data in Table 1, it appears appropriate that the Zaire specimen is treated separately from *belcheri*, since all the figures for *belcheri* differ considerably, falling, indeed, within the ranges for the 10 specimens of *natalicus*. Thus the inland *belcheri* is exceptional in its wing measurements, and its separation from the breeding grounds of *natalicus* may have been a relatively recent event.

Based not only on the figures in Table 1 but also on the colour-characters described, it seems justifiable to recognise this new race, even though it is only known from a single sub-adult specimen. If immediate steps are not taken to preserve the Imatong forests, *maxis* could become extinct before more is learned about it.

POSTSCRIPT:

Benson would like to add to his personal communication above re *T. f. belcheri*: 'apart from Douglas's record for 31 August, which is from Soche Mt, one was seen by Johnston-Stewart (*Nyala* 3(1), 1977: 89) on Thyolo Mt, 8 July. Neither record is questioned by Dowsett (*Nyala* 7(1), 1981: 39-40) in his review of montane birds in Malawi. The July record does not support the likelihood of any movement.' - Ed.

Acknowledgements: I am grateful to C. W. Benson for his helpful comments on this paper; to I. C. J. Galbraith for access to the collections in Tring; to G. R. Cunningham-van Someren for sending me the measurements of the 3 skins in the Nairobi Museum; and to Dr. M. Louette for the loan of the specimen from Zaire, in Tervuren. Further I wish to thank the Ministry of Wildlife in Juba, especially Director Henry Minga, for assistance and permission to carry out studies in the Imatong Mountains.

References:

- Benson, C. W. 1950. Some notes on the Spotted Forest Thrush *Turdus fischeri*. *Ostrich* 21: 58-61.
 Benson, C. W. & Benson, F. M. 1975. Studies of some Malawi birds. *Arnoldia* (Rhod.) 7(32).
 Britton, P. L. & Rathbun, G. B. 1978. Two migratory thrushes and the African Pitta in coastal Kenya. *Scopus* 2: 11-17.
 Douglas, M. G. 1978. *Nyala* Records. *Nyala* (J. Nat. Fauna Pres. Soc. Malawi) 4(2): 117.

Address: G. Nikolaus, Feldweg 87, 219 Cuxhaven, West Germany.

Weights of some Venezuelan birds

by Betsy Trent Thomas

Received 14 September 1981

In spite of recent advances in our knowledge of the avifauna of the northern neotropics, much basic information, such as body weights, remains unavailable for many species. I give here 738 body weights of 141 species of Venezuelan birds. Other papers with weights of birds from northern South America are from Colombia (Miller 1947, Burton 1973, 1975, Russell *et al.* 1979), Venezuela (Collins 1972), Trinidad (Snow & Snow 1963, French 1973) and Suriname (Haverschmidt 1948, 1952, 1968).

From 1976 to 1981, during the course of several field studies, I obtained most of the weights presented here from birds mist-netted on a cattle ranch in the Venezuelan llanos, Estado Guárico (elev. 63 m); a detailed treatment of the avifauna of this area is presented elsewhere (Thomas 1979). Smaller samples of birds were netted at 2 sites in Estado Miranda, Los Anaucos (elev. 550 m) and Fila Mitana (elev. 1090 m), and in Estado Aragua at Rancho Grande in Henri Pittier National Park (elev. 1100 m). The Estado Miranda sites are in the coastal range of mountains about 30 km south of Caracas, while the Estado Aragua site is in the same mountains but 90 km to the west.

The birds were weighed on Pesola spring balances of 10, 50, 100, 300 and 1000 gramme capacity, usually within 15 minutes of capture. Weights less than 100 grammes were recorded to the nearest tenth of a gramme; from 100 to 300 grammes to the nearest gramme and above that to the nearest 5 grammes. Nearly all netting was done between 7 a.m. and 12 noon and no weights are given of known juvenile birds. When I examined the birds, I also recorded, for most species, their soft part colours, usually the bill, gape, iris, legs and feet, using the Naturalist's Color Guide (Smithe 1975) in the hand. These colour notes are available for specific birds on request from the author. The sequence of species for the weight data follows Meyer de Schauensee & Phelps (1978). When samples exceed 7, the number, range, mean and standard deviations are given.

Clark (1979), in his review, reported that bird weights vary due to a variety of conditions, but that some evidence suggests that tropical resident species' weights vary little seasonally. In Trinidad, Snow & Snow (1963)

TABLE 1
Weights of some recaptured ringed birds in Venezuela

	Capture date	Weight (gm)		Capture date	Weight (gm)
<i>Phacellodomus rufifrons</i>			<i>Conopias inornata</i>		
O-O (LA)	18 Jul 1977	25.8	1G-31G	29 Apr 1977	29.5
	6 Jul 1978	26.3		9 Apr 1980	29.0
	4 Mar 1981	26.6			
W-W (LA)	31 Aug 1977	27.8	RG-16RG	10 May 1979	27.6
	27 Dec 1977	26.3		16 Mar 1981	28.0
dB-dB	26 Jun 1979	25.8	YdB-Y31	13 Apr 1980	29.0
	24 Apr 1981	27.0		15 Mar 1981	31.0
<i>Tachyphonus rufus</i>			<i>Arremonops conirostris</i>		
odB-odB (LA)	27 Dec 1977	32.1	dB-dB (LA)	4 Mar 1981	29.8
	3 Dec 1978	31.5		27 Oct 1981	31.5

found only small seasonal variation in bird weights and that the same individuals' weights remained fairly constant; my observations agree with both points. Although my data are few, the occasional recapture of birds ringed as adults suggests that individuals' weights vary little either with season or age (Table 1). The species of birds in Table 1 are not migratory and they live exclusively on the same territories throughout the year.

TABLE 2

A comparison of bird weights between some northern neotropical areas

	Suriname (Haverschmidt)	Trinidad (French)	Trinidad (Snow & Snow)	Venezuela (this paper) ¹	Venezuela (Collins)
<i>Columbina talpacoti</i> ³	45.5 ± 4.65 ² (41-52) N=4	=	♂♂ 48.1 ± 3.5 (40.5-56.5) N=38 ♀♀ 44.8 ± 3.3 (35.5-51.5) N=36	45.55 ± 3.73 (41.5-53.5) N=18	=
<i>Leptotila verreauxi</i> ⁴	113.66 ± 12.09 (99-129) N=6	143.8 (123-168) N=12	=	150.97 ± 10.12 (134-169.5) N=14	=
<i>Pitangus sulphuratus</i> ⁵	53.25 ± 4.35 (49-57) N=4	59.55 (53-67) N=14	61.0 ± 4.45 (57-67) N=5	60.96 ± 4.07 (53.5-67.5) N=15	=
<i>Notichelidon cyanoleuca</i>	=	=	=	9.7 ± 0.59 (8.5-10.8) N=21	10.48 ± 0.47 (9.5-11.3) N=15
<i>Turdus nudigenis</i>	63.5 ± 5.32 (58-69) N=4	=	♂♂ 61.6 ± 4.6 (55-74.5) N=25 ♀♀ 65.6 (56.5-74) N=9 unsexed 64.7 (57.5-72) N=54	58.47 ± 3.81 (53-66) N=21	=
<i>Coereba flaveola</i>	=	=	♂♂ 10.5 ± 0.69 (9-12) N=34 ♀♀ 9.9 ± 0.64 (9-11) N=24	9.16 ± 0.61 (7.9-10.5) N=16	=
<i>Thraupis episcopus</i> ⁶	33.5 ± 4.36 (28-37) N=4	=	37.1 (31-42.5) N=28	32.6 ± 2.1 (29.5-36.5) N=12	34.75 ± 2.35 (32-38.5) N=5
<i>Saltator coeruleus</i>	49.75 ± 3.09 (47-54) N=4	=	52.0 ± 1.73 (48.5-54) N=8	54.69 ± 4.73 (49-67) N=24	=

¹ All data combined.

² Weights given in grammes with standard deviations, range in parentheses.

³ *Talpacoti talpacoti talpacoti* in Suriname; *T. t. rufipennis* in Trinidad and Venezuela.

⁴ *Leptotila verreauxi brasiliensis* in Suriname; *L. v. verreauxi* in Trinidad and Venezuela.

⁵ *Pitangus sulphuratus sulphuratus* in Suriname; *P. s. trinitatus* in Trinidad; *P. s. rufipennis* in Venezuela.

⁶ *Thraupis episcopus episcopus* in Suriname; *T. e. nesophila* in Trinidad; *T. e. cana* in Venezuela.

Table 2 gives weights for a few birds where comparable data exists, although the sample sizes generally are small. With the exception of *Turdus nudigenis* the birds from Suriname appear to be smaller than those from Trinidad and Venezuela; the extremes are the 2 continental forms of *Leptotila verreauxi brasiliensis* in Suriname, when compared with *L. v. verreauxi* of Venezuela. However, the most significant point is our paucity of data, which clearly indicates that much more work must be done in the neotropics before such trends can be verified.

The following weights are of birds from the Venezuelan llanos unless otherwise identified; others are from Los Anaucos (LA), Fila Mitana (FM) and Rancho Grande (RG). All weights in grammes.

*North American migrant **Austral migrant

- Butorides striatus*: unsexed 172.0
Gampsonyx swainsonii: unsexed 80.5
Elanoides forficatus: (LA) ♀ 445.0
Buteo magnirostris: (LA) unsexed 224.0
Jacana jacana: unsexed 108.5
**Tringa solitaria*: unsexed 43.8 October
Columbina minuta: ♂♂ 33.5, 36.9, ♀♀ 31.3, 32.6; unsexed 28.7, 29.5, 32.5
Columbina talpacoti: 13 unsexed 41.5 – 53.0 (45.08 ± 3.38); (LA) unsexed 41.5, 44.0, 45.0, 50.3, 53.0
Scardafella squammata: 18 unsexed 48.0 – 60.0 (54.16 ± 3.84); (LA) unsexed 51.5, 53.8
Leptotila verreauxi: 11 unsexed 134.0–169.5 (151.50 ± 11.05); (LA) unsexed 141.0, 152.5, 153.6
Aratinga pertinax: unsexed 76.8
Forpus passerinus: 8 ♂♂ 24.3–28.3 (25.86 ± 1.35), ♀♀ 21.5, 23.3, 24.5, 25.0, 26.0
**Coccyzus americanus*: unsexed 58.0 April
Piaya cayana: unsexed 84.0, 92.0, 97.5, 110.8
Crotophaga major: ♂ 175.0
Crotophaga sulcirostris: 8 unsexed 47.8–69.0 (58.61 ± 7.47)
Nyctidromus albigollis: ♂ 56.0
Phaethornis augusti: (LA) unsexed 5.0, 5.4, 5.4, 5.8; (RG) unsexed 5.1
Phaethornis longuemareus: (FM) unsexed 2.6
Colibri thalassinus: (FM) unsexed 5.1
Chrysolampis mosquitos: ♂ 3.5
Chlorostilbon mellisugus: (LA) unsexed 2.3
Amazilia fimbriata: unsexed 4.5, 4.7, 4.9, 4.9, 5.3, 5.4, 5.5; (LA) 8 unsexed 3.5–6.2 (4.97 ± 0.79)
Amazilia tobaci: (LA) 3.7, 3.7, 4.0, 4.2, 4.5
Chalybura buffonii: (LA) ♂♂ 7.0, 7.2, ♀ 6.3
Heliodoxa leadbeateri: (FM) ♂ 7.1
Sternoclyta cyanopectus: (FM) ♂ 8.7
Coeligena coeligena: (RG) unsexed 8.2
Agelaiocercus kingi: (RG) ♂ 5.2
Chloroceryle americana: ♂ 26.0
Chloroceryle aenea: ♂♂ 13.0, 13.5, 13.5, 13.8, 15.0, 15.1, ♀♀ 14.0, 15.0, 15.8, 16.0, 16.8, 16.9
Galbula ruficanda: ♂♂ 24.5, 25.5, 25.8, ♀♀ 25.5, 27.8; (LA) ♂♂ 22.6, 22.9, ♀♀ 21.1, 22.6
Hypnelus ruficollis: 11 unsexed 43.3–57.0 (49.82 ± 4.04)
Picumnus squamulatus: (LA) ♂♂ 10.4, 10.6, 10.7, 10.8, 11.0, ♀ 9.9
Chrysotilus punctigula: ♂♂ 67.0, 70.0
Melanerpes rubricapillus: ♀♀ 43.5, 46.2, 50.7, unsexed 41.5, 43.5
Dendrocincla fuliginosa: (FM) unsexed 34.5
Xiporhynchus picus: 14 unsexed 35.3–46.8 (41.62 ± 3.16)
Xiporhynchus guttatus: (LA) unsexed 38.1
Campylorhynchus trochilirostris: unsexed 40.5, 41.0, 44.0; (LA) unsexed 39.0
Synallaxis albescens: unsexed 11.9, 14.3; (LA) unsexed 12.0, 13.8, 14.5
Synallaxis cinnamomea: (LA) unsexed 16.6
Certhiaxis cinnamomea: unsexed 14.5
Phacellodomus rufifrons: 22 unsexed 21.5–27.0 (24.50 ± 1.42); (LA) 14 unsexed 23.8–27.8 (24.70 ± 1.02)
Taraba major: (LA) ♂ 57.5
Sakesphorus canadensis: ♀ 20.0
Thamnophilus doliatus: (LA) ♂♂ 23.6, 25.5, 25.6, 26.3
Formicivora grisea: ♂ 11.5; (LA) ♂♂ 9.0, 9.5, 9.9, 10.4
Myrmeciza longipes: (LA) ♂ 27.0, ♀ 25.1
Grallaria ferruginepectus: (LA) ♂ 15.0
Chiroxipha lanceolata: ♂ 15.1, ♀ 14.1; (LA) ♀♀ 17.8, 18.6
Fluvicola pica: ♂ 14.3, ♀ 11.9
Pyrocephalus rubinus: ♀ 13.8
Machetornis rixosus: unsexed 28.3, 31.3
Tyrannus melancholicus: unsexed 33.5, 34.5, 35.0, 38.8, 40.5, 41.5
Megarhynchus pitangua: unsexed 68.5
Myiozetetes cayanensis: 14 unsexed 22.0–29.5 (25.88 ± 2.1)
Myiozetetes similis: 17 unsexed 22.0–28.5 (24.37 ± 1.62)
Conopias inornata [= *Myiozetetes*]: 35 unsexed 26.8–33.5 (29.42 ± 1.71)
Pitangus sulphuratus: 15 unsexed 53.5–67.5 (60.96 ± 4.07)

- Pitangus lictor*: unsexed 23.5
Myiarchus ferox: unsexed 24.3, 25.6, 25.8
Myiarchus tyrannulus: 9 unsexed 25.0–30.0 (28.25 $\pm$ 1.72)
Cnemotriccus fuscatus: (LA) unsexed 11.5, 11.6, 13.2
Myiobobus fasciatus: (LA) unsexed 8.0, 8.3, 8.9, 9.1, 9.9
Tolmomyias sulphureus: unsexed 15.0
Tolmomyias flaviventris: 11 unsexed 10.5–12.8 (11.79 $\pm$.06)
Todirostrum cinereum: ♂♂ 6.4, 6.5, 6.7, 6.8, 7.3, ♀♀ 6.5, 6.5, 7.2
Todirostrum sylvia: unsexed 8.5
Atalotriccus pilaris: (LA) unsexed 5.4, 7.5, 7.7, 9.1
Capsiempis flaveola: (LA) unsexed 7.9
Euscarthmus meloryphus: (LA) unsexed 7.0, 7.5
Inezia subflava: 14 unsexed 7.5–10.2 (8.38 $\pm$.63)
Elaenia flavogaster: unsexed 23.8, 24.1, 25.0; (LA) unsexed 21.0, 21.5, 22.3
***Elaenia parvirostris*: unsexed 13.3, 13.8, 13.9, 14.8, 16.3 May–June
Elaenia cristata: unsexed 11.5, 12.0
Myiopagis viridicata: (LA) unsexed 11.0, 11.6, 11.9, 12.3
Phaeomyias murina: unsexed 9.8, 10.4, 10.5, 11.3; (LA) unsexed 9.9
Campostoma obsoletum: unsexed 6.9, 7.5, 7.5; (LA) unsexed 6.8
Tyranniscus vilissimus: (LA) unsexed 10.1
Leptopogon superciliaris: (LA) unsexed 12.0
Mionectes olivaceus: (LA) ♂ 13.8, unsexed 13.0
Notiochelidon cyanoleuca: (RG) 21 unsexed 8.5–10.8 (9.7 $\pm$.59)
Stelgidopteryx ruficollis: (LA) unsexed 15.0
**Hirundo rustica*: unsexed 16.9 November
Cyanocorax yncas: (RG) unsexed 89.0
Campylorhynchus griseus: unsexed 37.0, 38.5, 43.5, 43.6, 45.0, 46.5
Campylorhynchus nuchalis: 10 unsexed 21.1–25.5 (23.22 $\pm$ 1.60)
Thryothorus rutilus: (LA) unsexed 15.6, 16.3
Thryothorus leucotis: unsexed 14.0
Troglodytes aedon: unsexed 12.8; (LA) unsexed 12.0, 12.8
Mimus gilvus: 16 unsexed 52.5–66.0 (58.4 $\pm$ 4.55)
**Catbarnus minimus*: unsexed 30.0, 30.5, November
Turdus leucomelas: unsexed 53.0, 60.0, 61.5
Turdus nudigenis: 21 unsexed 53.0–66.0 (58.47 $\pm$ 3.81)
Poliophtila plumbea: ♀ 7.0
Cyclarhis gujanensis: unsexed 25.5, 27.0; (LA) unsexed 25.0, 26.6, 28.2
Hylophilus aurantiifrons: (LA) unsexed 9.3, 9.8, 10.5
Hylophilus flavipes: unsexed 11.5; (LA) unsexed 9.9, 10.5
Molothrus bonariensis: (LA) ♂ 53.0
Cacicus cela: 16 unsexed 51.2–91.0 (61.73 $\pm$ 11.96)
Quiscalus lugubris: ♀ 50.0
Icterus icterus: unsexed 56.5, 63.0, 84.0; (LA) unsexed 68.0
Icterus nigrogularis: unsexed 31.0, 33.3, 36.0, 37.0
Gymnomystax mexicanus: unsexed 93.0
**Vermivora peregrina*: (LA) unsexed 9.4 January
Dendroica petechia: unsexed 9.0, 9.3
**Seiurus noveboracensis*: unsexed 15.4; (LA) unsexed 15.9 November, October
Geothlypis aequinoctialis: (LA) ♀ 13.0
**Setophaga ruticilla*: (LA) ♀♀ 7.5, 8.5 January, November
Basileuterus culicivorus: (LA) unsexed 9.4
Conirostrum speciosum: ♀ 8.0
Coereba flaveola: 9 unsexed 8.8–10.5 (9.39 $\pm$.55); (LA) unsexed 7.9, 8.4, 8.6, 8.9, 9.4, 9.4, 9.5
Tangara arthus: (RG) unsexed 20.0
Tangara cayana: (LA) unsexed 19.1
Tangara cyanoptera: (LA) ♀ 18.0
Euphonia trinitatis: ♂ 11.5, ♀♀ 8.8, 11.5
Euphonia laniirostris: (LA) ♀ 13.5
Thraupis episcopus: 10 unsexed 30.0–36.5 (32.78 $\pm$ 2.01); (LA) unsexed 29.5, 34.0
Thraupis glaucocolpa: 12 unsexed 31.3–37.3 (33.08 $\pm$ 2.38)
Ramphocelus carbo: (LA) ♀ 22.0
Tachyphonus rufus: (LA) ♂♂ 31.5, 32.0, 32.0, 32.1, ♀♀ 30.5, 32.0, 32.8, 33.5, 37.5
Rhodinocichla rosea: (LA) ♂♂ 43.0, 44.6

Nemosia pileata: ♂ 13.5

Cyanocopsa brissonii [= *cyanea*]: (LA) ♂♂ 20.0, 22.3, ♀♀ 18.9, 19.4, 22.5

Saltator coerulescens: 21 unsexed 49.0–67.0 (54.91 ± 5.01); (LA) unsexed 51.8, 53.0, 54.5

Saltator orenocensis: unsexed 34.5, 36.8

Saltator albicollis: (LA) unsexed 37.6

Paroaria gularis: unsexed 20.8, 21.4, 21.5, 21.8, 22.0, 23.0, 23.8

Coryphospingus pileatus: ♂♂ 13.8, 14.9, 15.0, 15.8, ♀♀ 14.3, 15.0

Arremonops conirostris: (LA) unsexed 24.6, 28.1, 29.0, 29.8, 31.5

Tiars bicolor: (LA) ♀ 10.5

Oryzoborus crassirostris: ♀ 19.8

Sporophila intermedia: 12 ♂♂ 11.2–13.5 (12.33 ± 0.81), ♀♀ 11.0, 11.3; (LA) ♂ 11.2

Sporophila nigricollis: (LA) ♂♂ 8.8, 8.9, 9.1, 9.5, 9.7, 10.0, ♀♀ 8.5, 9.5, 9.5, 10.0, 10.9, 11.25

Sporophila obscura: (LA) unsexed 11.4

Sporophila minuta: (LA) ♂♂ 8.0, 8.4

Volatinia jacarina: ♂♂ 8.0, 8.8, 9.4, 10.0, 10.0, 10.0, 10.3, ♀ 8.8; (LA) ♂♂ 9.2, 9.8, 10.5, ♀♀ 9.0, 9.0

Sicalis flaveola: 21 unsexed 17.0–23.4 (19.72 ± 1.5); (LA) ♀ 19.3, unsexed 21.0

Ammodramus humeralis: unsexed 15.8

Carduelis psaltria: (LA) ♂ 10.8, ♀ 10.2

Acknowledgements: I thank Tomás Blohm for permission to work on his ranch, Charles T. Collins for introducing me to bird netting and handling, as well as for suggestions on a draft of this paper, and the Frank M. Chapman Memorial Fund of the American Museum of Natural History for support of a field study of which this paper is a by-product.

References:

- Burton, P. J. K. 1973. Non-passerine bird weights from Colombia and Panama. *Bull. Brit. Orn. Cl.* 93: 116–118.
- 1975. Passerine bird weights from Panama and Colombia, with some notes on “soft-part” colours. *Bull. Brit. Orn. Cl.* 95: 82–86.
- Clark, G. A. 1979. Body weights of birds: a review. *Condor* 81: 193–202.
- Collins, C. T. 1972. Weights of some birds of north-central Venezuela. *Bull. Brit. Orn. Cl.* 92: 151–153.
- French, R. 1973. *A Guide to the Birds of Trinidad and Tobago*. Wynnewood, Pa.: Livingston Publishing Co.
- Haverschmidt, F. 1948. Bird weights from Surinam. *Wilson Bull.* 60: 230–239.
- 1952. More bird weights from Surinam. *Wilson Bull.* 64: 234–241.
- 1968. *Birds of Surinam*. Edinburgh and London: Oliver & Boyd.
- Meyer de Schauensee, R. & Phelps, W. H. 1978. *A Guide to the Birds of Venezuela*. Princeton, N. J.: Princeton University Press.
- Miller, A. H. 1947. The tropical avifauna of the upper Magdalena Valley, Colombia. *Auk* 64: 351–381.
- Russell, S. M., Barlow, J. C. & Lamm, D. W. 1979. Status of some birds on Isla San Andres and Isla Providencia, Colombia. *Condor* 81: 98–100.
- Smithe, F. B. 1975. *Naturalist's Color Guide*. New York: Am. Mus. Nat. Hist.
- Snow, D. W. & Snow, B. K. 1963. Weights and wing-lengths of some Trinidad birds. *Zoologica* 48: 1–12.
- Thomas, B. T. 1979. The birds of a ranch in the Venezuelan llanos. In *Vertebrate Ecology of the Northern Neotropics* (J. F. Eisenberg, Ed.) Washington, D.C.: Smithsonian Press.

Address: Betsy Trent Thomas, Apartado 80844, Caracas 1080-A, Venezuela.

© British Ornithologists' Club 1982

Eleven bird species new to Bolivia

by Thomas S. Schulenberg and J. V. Remsen, Jr.

Received 25 September 1981

Fieldwork conducted by the authors in the Departamento de La Paz, Bolivia, in 1981, produced specimens of 9 bird species not previously recorded from the country and 2 bird species previously known from Bolivia from sight

records only. Two localities were visited: (1) humid, hilly tropical forest bordering the upper Río Beni, about 20 km by river north of Puerto Linares, (c. 15°24'S, 67°33'W) at 600 m, 5 June–8 July, and (2) humid Temperate Zone cloud forest 1 km south of Chuspipata at 3050 m, 23 July–10 August; Chuspipata (16°13'S, 67°51'W) is the name of the pass between Unduavi and Yolosa on the La Paz–Caranavi highway.

LATERALLUS EXILIS Grey-breasted Crane

Four specimens were collected at our Río Beni site: 3 by S. M. Lanyon (LSUMZ 101655, 20 June, ♀, ovary 10 x 4 mm, largest ova 1.5 x 1.5 mm, skull 50% oss., 37 g, heavy fat; LSUMZ 101656, 24 June, ♀, ovary 10 x 5 mm, largest ova 1 x 1 mm, 43 g, heavy fat; LSUMZ 101243 (skeleton), 24 June, ♀, ovary 10 x 4 mm, largest ova 1 x 1 mm, 36 g, light fat) and 1 by Remsen (LSUMZ 101657, 30 June, testes 4 x 3 mm, 39 g, light fat, heavy body moult). Soft part colours were very similar to those given by Haverschmidt (1974), including an area of green, not mentioned by Ripley (1977), at the base of the otherwise dark upper mandible. All were collected in a large (c. 1 x ½ km), wet, grassy pasture with scattered bushes, where they were rather common and easily seen, often landing temporarily in small bushes after flushing. The song, similar to that of *L. melanophaius*, was an explosive, dry, descending trill lasting about 2 seconds. *L. melanophaius* (2 specimens collected) also inhabited this pasture, but in smaller numbers; it was apparently more restricted to marsh grasses surrounding small pools and ditches with standing water.

L. exilis was previously known from scattered localities from Belize to Panama and much of northern South America (Meyer de Schauensee 1966, Blake 1977, Ripley 1977). Our Bolivia specimens are approximately halfway between the nearest previous locality to the north, the Río Ucayali area of Peru (Hellmayr & Conover 1942) and a recently reported record for Paraguay (Storer 1981).

CAPRIMULGUS SERICOCAUDATUS Silky-tailed Nightjar

Two specimens were collected at our Río Beni site: one by A. P. Capparella on 18 June (LSUMZ 101698, ♂, ovary 3 x 2 mm, ova minute, 66 g); and one by Schulenberg on 4 July (LSUMZ 101699, ♂, testes 4 x 2 mm, 62 g). Both were flushed during the day from on or near the ground in mature, hilly tropical forest.

This rare species was known from only a few scattered localities in lowland South America, the nearest to our site being c. 1200 km to the northwest at Yarinacocha, Dpto. Loreto, Peru (Dickerman 1975). Our specimens can be referred to the race *mengeli* (R. W. Dickerman, *in litt.*), previously known from only 3 specimens, all from Yarinacocha.

NONNULA RUFICAPILLA Grey-cheeked Nunlet

Between 22 and 29 June, 4 specimens were netted at our Río Beni site: LSUMZ 101858–101861; 3 ♀♀, 1 sex unknown, none in breeding condition, 2 with head and body moult, 2 without, insects in all 4 stomachs. All specimens and most of our few sight records were from the vicinity of bamboo thickets near the river. D. Wiedenfeld (pers. comm.) saw a pair once in hilly forest undergrowth above the river, and Schulenberg saw a single in dense undergrowth along a stream bed in hilly forest.

N. ruficapilla was previously known from eastern Panama and northern Colombia (*N. r. frontalis* and *pallidescens*) and from eastern Peru and western Brazil (*N. r. ruficapilla*). The nearest specimen records to our Bolivia site are from the mouth of the Río La Torre, south bank of the Río Tambopata, Dpto. Madre de Dios, Peru (LSUMZ 92011, 98190-98192, 99592), c. 400 km to the northwest. As this species is not easily detected without use of mist-nets, it is likely that it will eventually be found throughout northern Bolivia in appropriate habitat (river-edge bamboo thickets).

EUBUCCO RICHARDSONI Lemon-throated Barbet

This species was seen or heard almost daily at our Río Beni site. Schulenberg collected 2 specimens: LSUMZ 101867, 9 June, ♀, ovary 5 x 3 mm, ova minute, skull 50% ossified, 32 g, light fat, moderate body moult; LSUMZ 101868, 5 July, ♂, testes 4 x 2 mm, skull oss., 40 g, moderate fat, light body moult. The stomachs of both contained fruit parts, but on 6 occasions, individuals were seen picking apart dead leaves or rotting wood in search of (presumably) insects, much in the manner of *E. versicolor* (Remsen, pers. obs.). *E. richardsoni* was always seen singly or in pairs in canopy flocks of tanagers. The song was very similar to the low-pitched, far-carrying, 1-2 second trill of *E. versicolor*, but was broken into several 2-parted segments rather than being a continuous stream of notes.

E. richardsoni is widespread in western Amazonia (Meyer de Schauensee 1966) and its presence in northern Bolivia was not surprising; Schulenberg and others have seen it on the Peruvian bank of the Río Heath, Dpto. Madre de Dios, and at the mouth of the Río La Torre, south bank of the Río Tambopata, Dpto. Madre de Dios, c. 350 and 400 km, respectively, northwest of our Bolivia site.

ANCISTROPS STRIGILATUS Chestnut-winged Hookbill

This species was noted on 5 occasions in canopy mixed-species flocks at our Río Beni site. One specimen was netted: LSUMZ 102020, 15 June, ♂, testes 3 x 2 mm, 35 g, light fat, skull ossified. With specimens of this widespread Amazonia species known from the Peruvian bank of the Río Heath, Dpto. Madre de Dios (LSUMZ 84707-84708) and the mouth of the Río La Torre, south bank of the Río Tambopata, Dpto. Madre de Dios (LSUMZ 92279), c. 350 and 400 km, respectively, northwest of our Bolivia site, its presence in Bolivia is not surprising.

HYLOCTISTES SUBULATUS Striped Woodhaunter

Two specimens were netted at our Río Beni site: LSUMZ 102021, 22 June, ♂, testes 7 x 3 mm, 30 g, no fat, skull oss., and LSUMZ 102022, 30 June, ♀, ovary 6 x 4 mm, ova minute, 23.8 g, no fat, skull 75% oss.; stomachs of both contained insects, including beetles. This secretive bird was not observed in the field at this locality.

Specimens of this widespread Amazonian species have been taken c. 400 km northwest of our site, at the mouth of Río La Torre, south bank of Río Tambopata, Dpto. Madre de Dios (LSUMZ 87867, 92278); thus its presence in Bolivia was to be expected.

GRALLARICULA FERRUGINEPECTUS Rusty-breasted Antpitta

Five specimens (LSUMZ 102249-102253) were obtained (2 collected by Schulenberg and 3 netted) in humid forest 1 km south of Chuspipata at

2850–3050 m, 27 July–9 August. The specimens, all adults (3 ♂♂, 2 ♀♀) ranged in weight from 15 to 18 g, none was in reproductive condition, and all had insects in their stomachs.

The nearest previously reported records are from Cordillera Vilcabamba, Dpto. Cuzco, Peru (Weske 1972), c. 700 km northwest of our site. Our Bolivia specimens closely resemble a series of 43 specimens (LSUMZ) from Dpto. Amazonas south to Dpto. Huánuco, Peru, but differ slightly in showing a tendency towards greyer crowns, more olive mantles, and reduced loreal spots.

TACHYGINETA LEUCOPYGA Chilean Swallow

At our Río Beni site, on 24 June, Remsen found, and Schulenberg collected, a specimen of this species as it foraged with 200 *Notiochelidon cyanoleuca* over the large pasture in which the *Laterallus exilis* specimens were obtained (see above). The bird (LSUMZ 102971) was a ♀ (ovary 4 x 2 mm, ova minute, 15.5 g, moderate fat). This appears to be the first incontrovertible record of *Tachycineta leucopyga* for Bolivia.

This swallow breeds in southern Chile and Argentina; wintering birds migrate north to northern Argentina, Paraguay, and southern Brazil. Meyer de Schauensee (1966:393) states that it may winter "possibly also in Bolivia (Falls of the Río Madeira?, cf. Olrog, *Opera Lilloana* 19, 1963)", but we can find no reference to this species in Olrog (1963). Allen (1889) reported that Rusby collected a Bolivian specimen on the Falls of the Madeira. Hellmayr (1932:430) believed that some of Rusby's specimen labels were transposed, and questioned Rusby's Bolivian record of *Tachycineta leucopyga* (Hellmayr 1935). We know of no other references to this species for Bolivia.

RAMPHOCAENUS MELANURUS Long-billed Gnatwren

This species was recorded regularly in small numbers at our Río Beni site. Schulenberg collected 2 singing males: LSUMZ 102857, 16 June, ♂, testes 1 x 1 mm, 11.5 g, light fat; LSUMZ 102858, 27 June, ♂, testes 2 x 1 mm, 11 g, little fat. Both had ossified skulls, insects in their stomachs, and showed moderate body moult. All observations came from hilly forest with extensive areas of dense vine tangles that extended from near the canopy (20–30 m) to near the ground. Gnatwrens were seen from 3 to 20 m above the ground in these tangles. In such situations the birds were difficult to observe, and were most readily located by their persistent song. The song is a very loud, slightly descending trill that lasts c. 1 sec, given at about 10 sec intervals and c. 10–20 times in succession.

The presence of *R. melanurus* in Bolivia was to be expected, as it is known from the upper Río Madeira (Zimmer 1937) and upper Río Purús (Gyldenstolpe 1951). The closest previous locality was 105 km west of Puerto Maldonado, Dpto. Madre de Dios, Peru (LSUMZ 78994–78995), c. 450 km northwest of our Río Beni site.

CARYOTHRAUSTES HUMERALIS Yellow-shouldered Grosbeak

This species was noted regularly at our Río Beni site in canopy flocks of tanagers. Two specimens were collected by Remsen: LSUMZ (102967, 1 July, ♀, ovary 6 x 3 mm, ova minute, 31 g, no fat; LSUMZ 102968, 2 July, ♂, testes 2 x 2 mm, 37 g, no fat. The stomachs of both contained insects and that of the male also contained a few seeds (LSUMZ Stomach Contents

Collection). This species was always noted high (20–40 m) above ground in mixed-species flocks in mature forest, most frequently in rather open, sparsely-foliated trees in which it gleaned insects from the undersides of leaves with slow, deliberate movements (although one hover-glean was recorded). The call note was a loud, clear, sweet “suweet” with rising inflection, resembling in quality the call notes of many *Tangara* species with which it flocks.

This species was known only from “Bogota” trade skins, one locality in eastern Ecuador, one in extreme western Brazil (Paynter 1970), 2 in southern Peru (Parker & O’Neill 1980, T. A. Parker ms.), and Remsen’s sight records from Dpto. Cochabamba, Bolivia (Remsen & Ridgely 1980).

HEMISPINGUS XANTHOPHTHALMUS Drab Hemispingus

This species was noted daily in tall, humid forest 1 km south of Chuspipata at 3050 m. Six specimens (3 of each sex, LSUMZ 103024–103029) were collected (3 by Schulenberg, 2 by Remsen, 1 by S. M. Lanyon). Mean body weight was 11.3 g and the only bird in reproductive condition was a male with testes 5 x 3 mm; all stomachs contained insects. Our Bolivian series does not differ in any consistent way from the LSUMZ series (N=28) from Peru.

H. xanthophthalmus was previously known from Bolivia from sight records from this same locality (Parker *et al.* 1979). In 1980, specimens were collected by Schulenberg and L. C. Binford near the Peru-Bolivia border at Valcón, 5 km NNW of Quiaca, Dpto. Puno, Peru at 3000 m (LSUMZ 98804–98808), bridging the gap between our Bolivia site and previously published records from Dpto. Cuzco, Peru (Meyer de Schauensee 1966, Parker & O’Neill 1980).

Acknowledgements: We are grateful to the Dirección de Ciencia y Tecnología and to the Academia Nacional de Ciencias for permission to work in Bolivia. We thank Gastón Bejarano, Ovidio Suarez Morales, Antonio Saavedra Muñoz, and J. Solomon for invaluable assistance in Bolivia. We wish to express our appreciation to our field companions in Bolivia in 1981: A. P. Capparella, S. M. Lanyon, M. Sánchez S., and D. Wiedenfeld. Mrs. B. Odom, Mr. J. S. McIlhenny and H. I. and L. Schweppe supported our fieldwork in Bolivia. M. A. Traylor helped to clarify the history of the previous reports of *Tachycineta leucopygia* from Bolivia. R. W. Dickerman identified our specimens of *Caprimulgus sericocaudatus mengeli*.

References:

- Allen, J. A. 1889. List of the birds collected in Bolivia by Dr. H. H. Rusby, with field notes by the collector. *Bull. Amer. Mus. Nat. Hist.* 2: 77–112.
- Blake, E. R. 1977. *Manual of Neotropical Birds*, Vol. 1. Chicago and London: University of Chicago Press.
- Dickerman, R. W. 1975. New subspecies of *Caprimulgus sericocaudatus* from the Amazon River Basin. *Bull. Brit. Orn. Cl.* 95: 18–19.
- Gyldenstolpe, N. 1951. The ornithology of the Rio Purus region in western Brazil. *Arkiv. Zool.* 2: 1–320.
- Haverschmidt, F. 1974. Notes on the Grey-breasted Crake *Laterallus exilis*. *Bull. Brit. Orn. Cl.* 94: 2–3.
- Hellmayr, C. E. 1932. *The Birds of Chile*. Field Mus. Nat. Hist., Zool. Series 19: 1–472.
- 1935. *Catalogue of Birds of the Americas*. Part 8. Field Mus. Nat. Hist., Zool. Series 13: 1–541.
- Hellmayr, C. E. & Conover, B. 1942. *Catalogue of Birds of the Americas*. Part 1, No. 1. Field Mus. Nat. Hist., Zool. Series 13: 1–636.
- Meyer de Schauensee, R. 1966. *The Species of Birds of South America*. Narberth, Pennsylvania: Livingston Publ. Co.
- Olrog, C. C. 1963. Notas sobre aves Bolivianas. *Acta. Zool. Lilloana* 19: 407–478.
- Parker, T. A. III & O’Neill, J. P. 1980. Notes on little known birds of the upper Urubamba Valley, southern Peru. *Auk* 97: 167–176.

- Parker, T. A. III, Remsen, J. V. Jr. & Heindel, J. A. 1980. Seven bird species new to Bolivia. *Bull. Brit. Orn. Cl.* 100: 160-162.
- Paynter, R. A. Jr. 1970. Subfamily Cardinalinae, p. 216-245 in *Checklist of Birds of the World*, Vol. XIII, Paynter, R. A., Jr. & R. W. Storer (Eds). Cambridge, Mass: Museum of Comparative Zoology.
- Remsen, J. V. Jr. & Ridgely, R. S. 1980. Additions to the avifauna of Bolivia. *Condor* 82: 69-75.
- Ripley, S. D. 1977. *Rails of the World*. Boston: David R. Godine.
- Storer, R. W. 1981. The rufous-faced crane (*Laterallus xenopterus*) and its Paraguayan congeners. *Wilson Bull.* 93: 137-144.
- Weske, J. S. 1972. The distribution of the avifauna in the Apurimac Valley of Peru with respect to environmental gradients, habitat, and related species. Unpublished Ph.D. thesis, Norman, Oklahoma: Univ. Oklahoma.
- Zimmer, J. T. 1937. Studies of Peruvian birds. No. 25. Notes on the genera *Thamnophilus*, *Thamnocharris*, *Gymnophithys*, and *Ramphococcyzus*. *Amer. Mus. Novit.* 917: 1-16.
- Address: T. S. Schulenberg and J. V. Remsen, Jr., Museum of Zoology, Louisiana State University, Baton Rouge, Louisiana 70803 USA.

©British Ornithologists' Club 1982.

Biological species limits in the *Cettia fortipes* complex

by D. R. Wells

Received 25 September 1981

On classical museum characters alone sections of the genus *Cettia* (*sensu* Delacour 1942-43) are among the trickiest of all sylviine warblers to identify. Their subdued brown plumages seem bereft of characters that could function as recognition marks in nature and visual cues may rank subordinate to signals of other kinds, such as vocalisations. Descriptions of *Cettia* songs in the literature (Ali & Ripley 1973, King *et al.* 1975, Neufeldt 1971, Smythies 1953) suggest a diversity well up to the sylviine average and a tendency also to unusual, arresting quality, confirmed in those described here. Through experiments with tape-recordings (this study; J. L. Gulledge, *in litt.*), songs have been shown to be important for territorial advertisement in the *C. fortipes* group, and among birds whose extreme skulking behaviour must reduce most visual contact to close-range encounters in dim light, they could also promote reproductive isolation. A taxonomic value is indicated (Lanyon 1969) and though I have found no reference to previous applications in *Cettia*, Dowsett & Stjernstedt (1979) have recently used song patterns to help resolve species limits in the related *Bradypterus*.

Delacour's reviews of these genera united under the name *Cettia fortipes* (Hodgson) the marginally tropical Sino-Himalayan bush warblers *C. f. fortipes*, *pallidus* and *davidianus* with 6 forms: *oreophila*, *banksi*, *sepiaria*, *flaviventris* (= *sumatrana*), *vulcania* (= *montana*) and *everetti* of the Sunda-Wallacea archipelago, linked via a small suite of morphometrical characters and seen as varying mainly in colour intensity with latitude. There are relatively few published natural history observations on any of these forms, especially from the southern range, but all those for which data are recorded do appear to select equivalent habitats, close to the ground in dense elfin forest, low thickets or rank herbage, always above 1000-2000 m altitude (e.g. Ali & Ripley 1973, Chasen & Hoogerwerf 1941). On Timur the endemic *everetti* is exceptional in having been collected from above 1500 m

down to 150 m (Mayr 1944, AMNH), at times of year when seasonal shifts of altitude range would not have been expected.

An insular niche-release of this type might have influenced dispersal locally, but most spread by the group has probably involved chance hopping between upland habitat-islands. With decreasing latitude, the continental Southeast Asian mountain summits nevertheless soon lose the appropriate indigenous vegetation zone (cf. Robbins & Smitinand 1966) and only in the Malay Peninsula does montane elfin forest reappear, at an altitude determined by the perhumid maritime climate. It closely resembles habitat now occupied in the Greater Sunda islands, but may not have been so continuously available because of the past situation of the Peninsula in the interior of a, now drowned, Pleistocene Sunda continent. Former Malayan populations, if they ever existed, could then have been eliminated through lack of refugia in the form of sufficiently high massifs and/or areas of mountain vegetation modified by vulcanism as in Indonesia. Assuming no other dispersal route, therefore, north-south gene-flow may have been hindered over a long period, and Delacour's inclusive arrangement accords poorly with the finding that, despite appearance and ecology, Sino-Himalayan and at least some Sunda-Wallacean forms possess sharply different songs.

New data here on vocalisations are drawn from my own field-notes and recordings and the tape collections of Dr. J. T. Marshall and the Cornell University Library of Natural Sounds. Representative cuts from tapes of *pallidus* in Kashmir and NW Frontier province, Pakistan, of *fortipes* in eastern Nepal, *davidianus* on Taiwan, *oreophila* on Mt Kinabalu, northwestern Borneo, and *vulcania* on Mt Pangrango, western Java, were sonographed. A comparative series of wide-band sonograms is given in Figure 1 and basic acoustic measurements are summarised in Table I.

The Sino-Himalayan forms, *pallidus*, *fortipes* and *davidianus*, all open with a held note of increasing energy but even pitch, at between about 1.5 and 3.2 KHz. This is followed immediately by an explosive pulse of brief, strongly modulated notes varying in number inversely with the length of the held note so that the full phrase is of fairly constant duration: 1640–2120 ms in Pakistan and 1480–1930 ms on Taiwan, at opposite longitudinal extremes of the range. Verbalisations cited by Ali & Ripley (1973) for *pallidus* and *fortipes*: 'he'll . . . beat-you', 'wheeeee . . . chiwiyou', etc., fit my own impression of *fortipes* found in garden thickets at Darjeeling in late March 1971, when I noted down a song as *peeee . . . piui*.

Individual songs in Borneo and Java are shorter by up to one second and are a continuous whine, frequency-modulated throughout, with a sub-terminal crescendo that varies in shape but always spans a lesser range of frequencies than the explosive pulse of the northern song. Those of *oreophila* heard and taped on Mt Kinabalu in April 1975 typically opened with a brief grace-note, evident in the sonograms and loudest at about 4 KHz. This is represented by the first syllable of the verbalisation 'witch-a-wee-cheee-wee' given by Smythies (1981), which mistakenly fragments the succeeding whine but still gives a fair total impression of the *oreophila* song. In April 1978 entirely similar sounding vocalisations, as yet unsonographed, were taped in elfin forest on the upper slopes of Mt Mulu, type locality of *banksi*, in north Sarawak.

The limited tape and sonograph material of *vulcania* from west Java

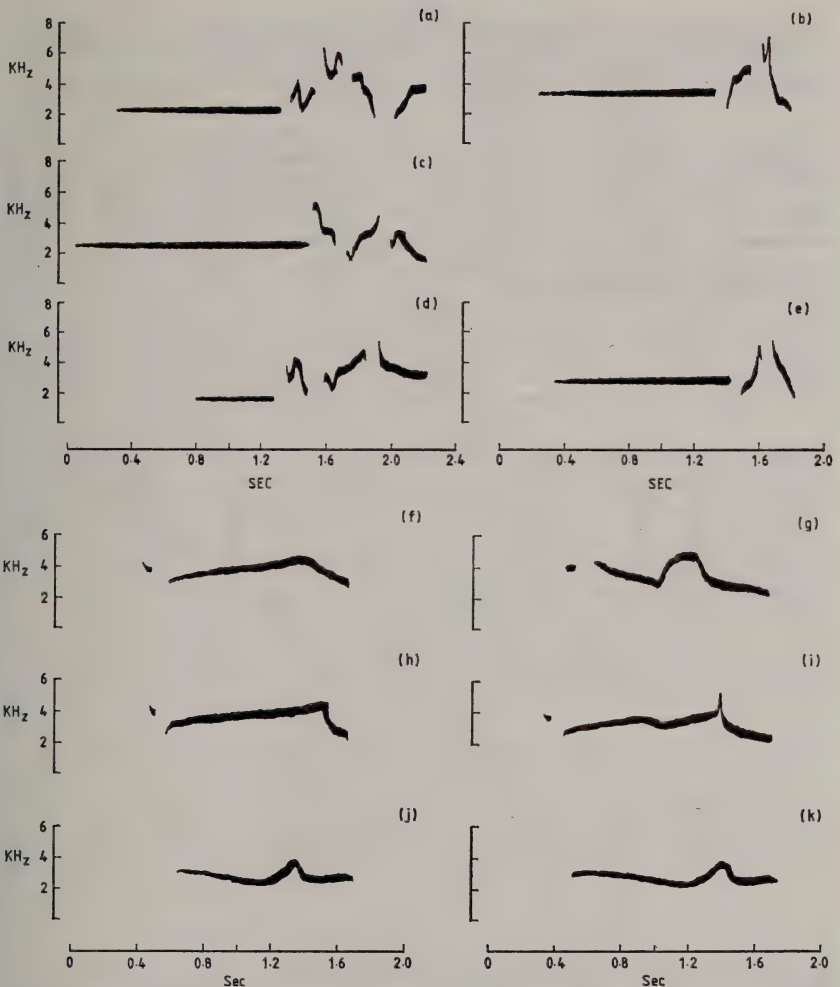


Fig. 1a. Broad band-width sonograms of sample songs in the *Cettia fortipes* complex: (a) and (b) *pallidus* (Kagan and Sind valleys, Pakistan), (c) *fortipes* (Arun valley, Nepal), (d) and (e) *dauidianus* (Taiwan).

(f)–(i) *oreophila* (variants from the repertoire of one individual on Mount Kinabalu, Sabah), (j) and (k) *vulcania* (Mount Pangrango, Java).

includes no songs with an introductory grace-note but this song form does occur within the range of *vulcania* on Bali. Thus a bird seen at Kintamani, central highlands, on 17 April 1973 gave a song which I noted down at the time as *chee-hu-ueeeoo*, a five-part impression directly equatable with Smythies' description from Kinabalu. Such a difference could be dialectic at most – and just as these Sunda island songs show a high degree of relatedness, so the contrasting Sino-Himalayan song has survived isolation on Taiwan in at least equivalent detail (Fig. 1). In all instances geographical contact may have been lost by the end of the Pleistocene and the internal consistency of

TABLE I
Some acoustic measurements of songs by bush warblers in the *Cettia fortipes* complex

Taxon	Number of notes ¹ (n)	First note duration (ms)	Full phrase duration (ms)	Frequency (KHz)		
				Base	Peak	Span
<i>vulcania</i>	one (3)	—	1160-1280	2.5	3.8-3.9	1.3-1.4
<i>oreophila</i>	one (8)	—	1060-1270	2.3-3.0	4.5-5.2	1.5-2.6
<i>pallidus</i>	three (4)	1200-1400	1640-1820	1.8-2.1	5.2-6.4	3.4-4.4
	five (4)	940-1200	1780-2120	1.8-2.1	5.4-6.0	3.6-4.1
<i>fortipes</i>	four (2)	1580-1640	2280	1.5-1.8	5.3-5.8	3.8-4.1
<i>davidianus</i>	three (4)	1060-1540	1480-1930	1.5-1.9	4.0-5.5	2.6-3.7
	four (1)	660	1540	2.1	4.7	2.6

¹Excluding introductory grace-notes.

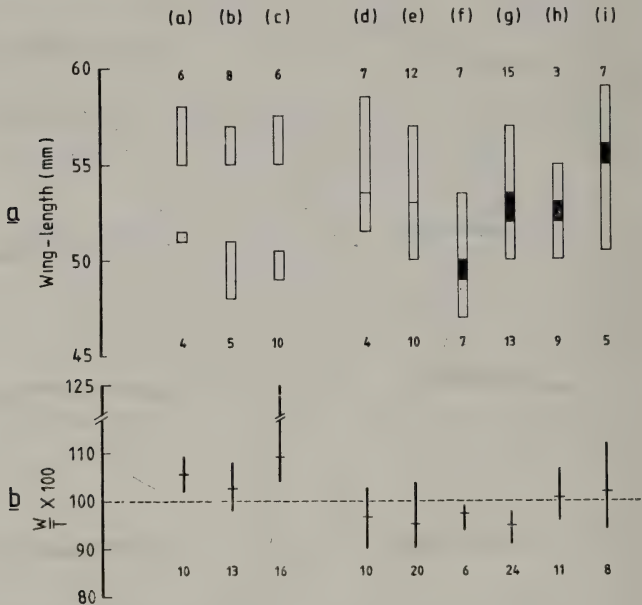


Fig. 2. Morphometric differences in the *Cettia fortipes* complex.
a. Male (upper column) and female (lower column) wing-length ranges, and
b. Wing-length/tail-length indices (range and mean):
(a) *pallidus*, (b) *fortipes*, (c) *davidianus*, (d) *palawana*, (e) *oreophila*, (f) *everetti*, (g) *vulcania*, (h) *flaviventris* and (i) *sepiaria*. Sample sizes are given opposite relevant ranges.

the 2 song patterns, each traversing a minimum 3 named morphological forms, implies an important genetic break.

Two small and unrelated morphometrical differences match this break. Male and female wing-length ranges were found to be separated by gaps of 3.5-4.5 mm in samples of the Sino-Himalayan forms, but were contiguous to broadly overlapping in 6 Sunda-Wallacean forms measured (Fig. 2a), including the recently discovered Philippine *palawana*. A wing-length:tail-length ratio (W/T x 100) likewise sorted 91 out of 99 specimens in the combined measurable sample (other than from Sumatra) to above or below value 100,

respectively, for Sino-Himalayan and Sunda-Wallacean groupings (Fig. 2b). Samples of 11 *flaviventris*, including the type (Violani 1980) from southern Sumatra, and 8 *sepiaria* from Mt Leuser in Aceh province were intermediate on this second character.

For these various reasons it is suggested that *Cettia fortipes* as constituted by Delacour is a probable composite, most sensibly restricted to include, of the named forms, only *pallidus*, *fortipes* and *davidianus*. These replace each other west to east in the Himalayan, north Burmese (Thailand) and south China uplands, from Pakistan to Taiwan. Records on conjoined hill-tracts in northern Vietnam, northern Laos and the Sittang-Salween divide at Nattaung peak (18° 49'N) (BMNH, King *et al.* 1975) probably also refer to this species, and could include an additional subspecies (Smith *et al.* 1944), though this has never been formally described. The specimen in question, from Nattaung, was collected in long grass fringing a hill road and no habitat now occupied that far south in continental Asia is likely to pre-date clearance of the mountain forest by man. Status there is uncertain.

It follows from this action that an additional species must be recognised to accommodate, in the first instance, *oreophila* and *banksi* of Borneo and *vulcania* of Java and Bali as agreeing on a combination of characters including distinctive vocalisations, or on these vocalisations alone. The position of the Lombok island population of *vulcania*, east of Bali, is problematical in that only 2 specimens were measured and its song is unknown; indeed, there are no records subsequent to the original collection of a century ago. Sumatran forms, *palawana* of Mt Mantalingajan, Palawan island, and *everetti* from Timur likewise conform on one or both of the morphometric characters, but until their songs are described can be only provisionally allocated to this second species.

The name adopted for it must be *Cettia vulcania* (Blyth) 1870 Java if under Article 11 of the International Code it is accepted that, as first describer, Blyth acquired authorship of a manuscript name he himself attributed to Solomon Müller (Delacour 1947). As pointed out by others (e.g. Phillips 1968) the more widely used name for the Javan bird, *montana* Horsfield 1821, is a primary homonym of *Sylvia montana* Wilson 1812, applied to a parulid warbler.

'Strong-footed Bush Warbler' remains valid as a vernacular name for the Sino-Himalayan species since it was coined for nominate *fortipes* prior to Delacour's revision. 'Müller's Bush Warbler' is proposed as a new and suitably commemorative name for *C. vulcania*. Other recent English names apply across species and should be abandoned for this reason.

Acknowledgements: Particular thanks are due to Dr J. L. Gulledge for making available material in the Cornell University Library of Natural Sounds and for producing the sonograms. Study specimens were borrowed through the courtesy of the Philadelphia Academy of Natural Sciences, the British Museum (Natural History) (BMNH), the Rijksmuseum van Natuurlijke Historie, Leiden, and Muzium Sarawak, Kuching. Mrs Mary LeCroy, Professor C. G. Sibley, and Drs A. L. Mack and D. M. Miles sent additional data from collections in their charge. Dr G. F. Mees, Dr K. C. Parkes, Mr E. C. Dickinson and Dr J. T. Marshall made valuable comments at various stages, and Dr Marshall also supplied the crucial tape from Java.

References:

- Ali, S. & Ripley, S. D. 1973. *Handbook of the Birds of India and Pakistan*. Vol. 8. Oxford University Press: Bombay.

- Chasen, F. N. & Hoogerwerf, A. 1941. The birds of the Netherlands/Indian Mt. Leuser expedition 1937 to north Sumatra. *Treubia* 18 (suppl.): 1-131.
- Delacour, J. 1942-43. The bush-warblers of the genera *Cettia* and *Bradypterus*, with notes on allied genera and species. *Ibis* 84: 509-519; 85: 27-40.
- 1947. The name of the Javanese Bush Warbler. *Auk* 64: 129.
- Dowsett, R. J. & Stjernerstedt, R. 1979. The *Bradypterus cinnamomeus-mariae* complex in Central Africa. *Bull. Brit. Orn. Cl.* 99: 86-94.
- King, B. F., Woodcock, M. W. & Dickinson, E. C. 1975. *A Field Guide to the Birds of South-east Asia*. Collins: London.
- Lanyon, W. E. 1969. Vocal characters and avian systematics. In Hinde, R. A. (ed.), *Bird Vocalisations*. Cambridge University Press: Cambridge.
- Mayr, E. 1944. The birds of Timor and Sumba. *Bull. Amer. Mus. Nat. Hist.* 83: 123-194.
- Neufeldt, I. A. 1971. Der Kurzflügelsänger *Horeites diphone* (Kittlitz). *Der Falke* 18: 364-375.
- Phillips, A. R. 1968. *Cettia montana* versus *C. fortipes* (Aves: Sylviinae). *J. Bombay Nat. Hist. Soc.* 65: 223-224.
- Robbins, R. G. & Smitinand, T. 1966. A botanical ascent of Doi Inthanond. *Nat. Hist. Bull. Siam Soc.* 21: 205-227.
- Smith, H. C., Garthwaite, P. F. & Smythies, B. E. 1944. On the birds of the Karen Hills and Karenni found over 3,000 feet. Part II. *J. Bombay Nat. Hist. Soc.* 44: 60-72.
- Smythies, B. E. 1953. *The Birds of Burma*. 2nd Edn. Oliver & Boyd: Edinburgh.
- 1981. *The Birds of Borneo*. 3rd Edn. (ed. The Earl of Cranbrook). The Malayan Nature Society and Sabah Society, Kuala Lumpur.
- Violani, C. 1980. 'What is *Brachypteryx flaviventris* Salvadori?' *Bull. Brit. Orn. Cl.* 100: 186-189.

Address: Dr David Wells, Zoology Department, University of Malaya, Kuala Lumpur 22-11, Malaysia.

©British Ornithologists' Club. 1982.

A confirmation of the specific relations of *Cuculus saturatus insulindae* Hartert

by D. R. Wells

Received 25 September 1981

Becking (1975) and Wells & Becking (1975) invoked details of plumage, beak morphology, egg-shell appearance and ultrastructure, vocalisations and brood parasitism to show that *C. lepidus*, a small *Cuculus* resident in montane forests from Sumatra and peninsular Malaysia to the Lesser Sunda islands, is a diminutive Oriental Cuckoo *C. saturatus* and not, as widely assumed, a subspecies of *C. poliocephalus*. The eggs and brood hosts of a similar Bornean cuckoo, *insulindae*, are unknown but the few specimens examined in the above study shared critical morphology and plumage characters with both *lepidus* and northern subspecies of *C. saturatus*. *C. insulindae* was tentatively transferred to *saturatus* after taking into account the additio nalevidence of vocalizations commonly heard on Mount Kinabalu, Sabah, in February-March (Smythies 1959) and an evidently similar sound described on the label of a specimen from Kinabalu in the collection of the Sarawak Museum, Kuching.

During a visit to Kinabalu National Park 28-30 March 1975 I was able to satisfy myself that these vocalisations were one and the same. A *lepidus*-like call was heard repeatedly in lower montane forest at around 1500 m altitude. It was tape-recorded and the calling bird attracted to a play-back proved, as guessed, to be a small *Cuculus* fitting the description of *insulindae*. In April 1978 identical calls were heard at around 1300 m on Mount Mulu, Sarawak, about 180 miles SW of Kinabalu.

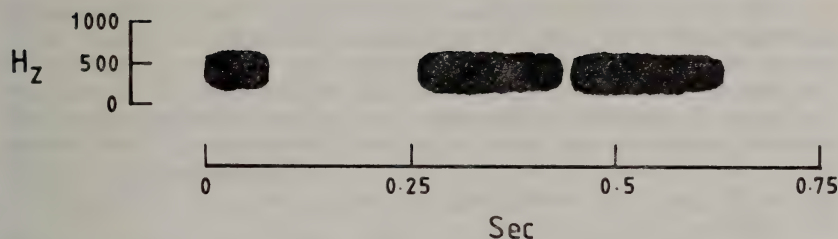


Fig. 1. Wide band-width sonogram of a call of *Cuculus insulindae* from Mount Kinabalu, Sabah.

A section of the Kinabalu tape was sonographed in wide-band mode (300 cps), and the sonogram of one sample call is drawn in Figure 1. It is substantially like that of *lepidus*, and utterly different from any authenticated call of *poliocephalus* (Wells & Becking 1975). The interval between the main energy pulses of notes one and two is 190 ms (200-230 ms in *lepidus*), the duration of the individual second and third notes is 170-200 ms (140-160 ms in *lepidus*), and their main energy is concentrated at 500 Hz (510-540 Hz in *lepidus*). A steady rate of 27-28 calls per minute compares with 21-23 by *lepidus* in Java and 24-28 by *C.s. saturatus* in Nepal. It differs from *lepidus* only in that note one is pitched even with the rest of the phrase, as in *C.s. horsfieldi* (Wells & Becking 1975, plate 22), and the interval between notes two and three is briefer, deviations slight enough to be treated as dialectic only.

Vocalisations therefore support the morphological evidence for identifying *insulindae* as a further subspecies of *Cuculus saturatus*.

Acknowledgement: I am grateful to Dr. J. L. Gulledge who made the sonogram at the Library of Natural Sounds, Ornithology Laboratory, Cornell University.

References:

- Becking, J. H. 1975. New Evidence of the specific affinity of *Cuculus lepidus* Müller. *Ibis* 117: 275-284.
 Smythies, B. E. 1959. Bird notes from Mt. Kinabalu. *Sarawak Mus. J.* 9: 257-262.
 Wells, D. R. & Becking, J. H. 1975. Vocalizations and status of Little and Himalayan cuckoos, *Cuculus poliocephalus* and *C. saturatus*, in Southeast Asia. *Ibis* 117: 366-371.

Address: Dr. David Wells, Zoology Department, University of Malaya, Kuala Lumpur, Malaysia.

© British Ornithologists' Club 1982

Behavioural and distributional notes on some unusual birds of a lower montane cloud forest in Peru

by Theodore A. Parker, III and Susan Allen Parker

Received 19 September 1981

From 30 August to 15 September 1977 we camped at 1100m in lower montane forest along the recently constructed Bagua-Pomacochas-Rioja highway, near "Afluente," about 80 road km northwest of Rioja, Dpto. San Martín. Parker & Parker (1980) give a description of this locality and information on the rarest species found by us there, *Xenerpestes singularis*.

Our field work was carried out in c. 4 km² of tall, mossy forest and in second growth around the edge of a 6 hectare man-made clearing, between 1000 and 1300m. 168 bird species (including 4 new to Peru) were found in this small area, many of them poorly known and rare in collections. Of this total, at least 30 species were not found outside the elevational limits given above and thus are particularly susceptible to the rapid destruction of forest taking place along the lower slopes of the Andes from Venezuela to Bolivia. The greatest dangers to this habitat come from tea cultivation and slash-and-burn agriculture.

In this paper we briefly comment on some of the species restricted to this narrow "Upper Tropical Zone," and give previously unpublished specimen data (Table 1) and additional localities, together with a complete list of the bird species and their relative abundance noted at Afluente (Appendix). Another LSUMZ (Louisiana State Museum of Zoology) group worked at higher elevations on the same mountain; some of their results have been published (O'Neill & Graves 1977), and others are referred to in this paper. Terminology for descriptions of foraging behaviours follows Fitzpatrick (1980).

PHLOGOPHILUS HEMILEUCURUS Ecuadorean Piedtail. Previously thought to be endemic to Ecuador, this hummingbird was observed daily in small numbers in recent second-growth along forest edge and in open forest undergrowth at 1100m. These birds were seen hanging on small red, tubular flowers. Their small size and striking tail pattern are good field marks. 8 specimens were netted (see Table 1). In addition to these specimens, J. P. O'Neill netted another individual on 22 July 1978 near the crest of a ridge ("2600 ft") at the headwaters of the Río Cenepa, Dpto. Amazonas. These records are the first for Peru, and they represent a southerly range extension of about 350 km.

UROCHROA BOUGERI White-tailed Hillstar. This was a rare bird in the Afluente area. A single specimen (Table 1), *U.b. leucura*, was netted in forest undergrowth on a steep slope at 1100m. The species was seen only 3 times during our stay, including an observation of an individual flycatching in open, well-shaded spaces 2-4m above ground in tall river-edge forest. *U. bougeri* was previously known primarily from the Western Andes of Colombia and the Eastern Andes of Ecuador (Meyer de Schauensee 1966); these are the first records for Peru.

PICUMNUS STEINDACHNERI Speckle-chested Piculet. This species was observed almost daily with large mixed-species flocks of ovenbirds, woodcreepers, flycatchers and tanagers that moved through forest canopy and tall second-growth. The piculets foraged primarily near the ends of slender branches and vines, on which their vigorous tapping produced a distinctive rattling sound. On several days a pair of adults with 2 juveniles was noted in a flock, the juveniles noisily begging for food. The only vocalisation given by adults was a high-pitched trill lasting several seconds. Five specimens were netted (Table 1). *P. steindachneri* is endemic to northern Peru, and is known only from the Departments of Amazonas and San Martín (Meyer de Schauensee 1966).

HERPSILOCHMUS AXILLARIS Yellow-margined Antwren. These antbirds were observed in groups of 2-6, always in association with mixed-species flocks.

They preferred dense foliage and vine tangles at mid-heights in the forest edge, where they gleaned leaves and twigs, occasionally hover-gleaning from the leaves. Nasal "aw" call notes are like those of its more widespread congener *H. rufimarginatus*. Its song is a soft *Thamnophilus doliatus*-like roll. One specimen was collected from a forest flock (Table 1). The species is known only from a few Andean localities from Colombia to southern Peru (Meyer de Schauensee 1966).

MYIOPHOBUS PHOENICOMITRA Orange-crested Flycatcher. We found this flycatcher to be fairly common. They were netted in open spaces in the upper undergrowth and at mid-heights, 2-5 m above ground, being seen in pairs and (family?) groups of 3-4 birds. Six specimens were netted (Table 1), all agreeing with the description of the nominate race in Cory & Hellmayr (1927). This is the first record of *M. phoenicomitra* in Peru.

MYIOPHOBUS RORAIMAE Roraiman Flycatcher. These flycatchers were observed only once, when 3 were seen together in shrubbery at the edge of very dense, stunted forest on sandy soil at 1070 m. Three specimens were netted in similar habitat nearby and also in tall forest undergrowth (Table 1). A specimen of *M. roraimae* was also collected by J. P. O'Neill on 13 July 1970 at Huanhuachayo (1660 m), Dpto. Ayacucho and another individual was taken by T. S. Schulenberg on 19 August 1977 just east of Abra Divisoria (1400 m), Dpto. Huánuco (both in Table 1). These observations and specimens substantially augment the Peruvian distribution (Sandia, Dpto. Puno) given by Traylor (1979). In addition, Terborgh & Weske (1975) give the elevational ranges for the species as 1320-1520 m in the Sira Mountains, Dpto. Huánuco, and 1210-1520 m in the Vilcabamba Mountains, Dpto. Cuzco. *M. roraimae* apparently occurs throughout Peru, and probably Ecuador, in a very narrow elevational zone of lower montane cloud forest.

MYIOPHOBUS CRYPTOXANTHUS Olive-chested Flycatcher. One was netted in low second-growth along a river at 1100 m. The species known from only a few scattered localities in Ecuador and northern Peru (Traylor 1979) and its true relationship to widespread *M. fasciatus* remains to be determined. The 2 species prefer similar forest edge habitats, but whether or not they are ever syntopic (*cryptoxanthus* occurs at slightly higher elevations than *fasciatus*) is not known. Furthermore, both species share at least one type of vocalisation, a rather soft, rapidly delivered "weh-weh-weh-eh-eh-eh-eh." Morphologically, the 2 species differ in only minor ways, and in fact, *M. cryptoxanthus* was considered a race of *M. fasciatus* by Cory & Hellmayr (1927).

RHYNCHOCYCLUS FULVPECTUS Fulvous-breasted Flatbill. A pair was observed several times at mid-heights in tall, mossy, river-edge forest at 1100 m, occasionally following mixed-species flocks, but usually noted apart from other birds. They often remained on one perch for periods of up to 1 minute, and sallied outwards and upwards to glean insects from foliage and twigs. On 31st August 1977 a closed, pendant nest containing 2 white, cinnamon-flecked eggs was found about 3 m above a dry stream-bed. The structure measured approximately 8 x 3 cm and was made of slender twigs, grasses, mosses and a few leaves; its entrance was near the bottom at one side. The incubating female was collected (Table 1). Within its extensive latitudinal range of Colombia to Bolivia (Meyer de Schauensee 1966), *R. fulvpectus* apparently has a narrow elevational range along the lower slopes of the Andes.

POECILOTRICCUS CAPITALE Black-and-white Tody-Flycatcher. This rare species was recorded twice; a male was seen and a female was netted (Table 1). Both individuals were in tall shrubs and small trees at forest edge not far from a stream at 1100 m. The male was making short upward sallies to foliage 1-2 m above ground. The LSUMZ has two other unpublished specimens of *P. capitale*, a male netted by T.A.P. on 15 December 1974 in second-growth 20 km SW of Chiriaco (520 m), Dpto. Amazonas, and another male collected on 5 August 1977 by Juan Yampits at Shaim on the upper Río Comaina, Dpto. Amazonas (Table 1). This poorly known species has been found from southeastern Colombia to northern Peru, where formerly it was reported only from the Departments of Loreto and San Martín (Traylor 1979).

MECOCERCULUS CALOPTERUS Rufous-winged Tyrannulet. Several of these warbler-like flycatchers were observed with mixed-species flocks in small-leaved canopies of tall trees from 1220 to 1370 m. Their foraging movements were varied and included perch-gleans, short upward sallies and hover-gleans of foliage. Its small geographic range is given by Traylor (1979) as southern and central Ecuador to northern Peru in Dpto. San Martín. LSUMZ personnel (T. Parker, M. Robbins) have additional sight records from farther south, along the Tayabamba-Ongon trail, in extreme eastern Dpto. La Libertad.

TANGARA CHRYSOTIS Golden-eared Tanager. Of 10 species of *Tangara* found in the Afluente area, this one had the narrowest elevational distribution and was one of the least common. 1-2 were observed with most large flocks of tanagers and honeycreepers from 1070 to 1220 m; the species was not seen higher or lower. Individuals of *T. chrysotis* hopped along mostly bare branches, peering down from side to side and pausing to probe clumps of epiphytic mosses. They also occasionally gleaned leaves and were seen to feed on small melastome fruits as well. Only one specimen was obtained (Table 1). *T. chrysotis* ranges from Colombia to Bolivia, but it is scarce in collections and uncommon to rare in its cloud forest habitat.

CALOCHAETES COCCINEUS Vermilion Tanager. An uncommon to rare bird in this locality (but fairly common in the Cordillera Azul of Dpto. Huánuco), this species was seen irregularly from 1140 to 1370 m. One to several individuals were noted with mixed-species flocks of tanagers on only 3 occasions. The species may be more common at slightly higher elevations in this region. *Calochaetes* foraged in a manner similar to *Tangara chrysotis*. On 31 August 1976 J. P. O'Neill obtained 2 *C. coccineus* from forest canopy just above Afluente ("15 road km below Abra Patricia, 5500 ft"). Two additional specimens were obtained by O'Neill on 8 and 11 May 1971, respectively, at Huanhuachayo (1660 m), Dpto. Ayacucho, and 2 more were collected by J. W. Eley and T. S. Schulenberg on 8 and 11 August 1977, respectively, in tall cloud forest just east of Abra Divisoria (1370 m), in the Cordillera Azul, Dpto. Huánuco (see Table 1 for data on all of the above specimens). *C. coccineus* was previously known from only 2 localities in Peru (Storer 1970), and a few others in Colombia and Ecuador. Terborgh & Weske (1975) give its elevational limits as 1130 - 1570 m in the Sira Mts., Dpto. Huánuco and 1480 - 1950 m in the Vilcabamba Mts., Dpto. Cuzo.

CHLOROSPINGUS FLAVIGULARIS Yellow-throated Bush-Tanager. This was a common tanager from 900 to 1160 m, where it formed the nucleus of mixed-

Table 1. Data on some unusual birds collected in lower montane cloud forest in Peru

LSUMZ no.	Skull	Sex	Ovary (mm)	Ova (mm)	Testes (mm)	Weight (g)	Iris	Bill	Tarsi	Coll.
<i>Phlogophilus bemelucurus</i>										
84437	—	♂	6x4	several > 2x2	—	2.6	Brown	Black	Flesh-pink	P&P
84438	—	♀	4x4	several > 2x2	—	2.8	—	—	—	—
84439	—	♂	—	—	2x1	2.2	—	—	—	—
84957 (alcoholic)	—	—	—	—	—	2.7	—	—	—	—
84958 (alcoholic)	—	—	—	—	—	3.0	—	—	—	—
86364	—	♂	—	—	3x2	2.5	—	(typical in all specimens)	—	JPO
86389 (skeleton)	—	♀	—	—	2x1	2.5	—	—	—	P&P
86692 (skeleton)	—	♂	3x3	not enl.	—	2.3	—	—	—	—
87397	—	♀	—	—	C. 3x2	3.0	—	—	—	—
<i>Urochroa bougueri</i>										
84451	—	—	—	—	4x3	8.7	—	—	—	P&P
<i>Picumnus steindachneri</i>										
84571	ossified	♂	—	—	(R) C. 4x2 (L) C. 2x1	10.5	Brown	Max. black w/ blue-grey base Mand. blue-grey w/black tip	Grey	P&P
84572	unossified	♀	—	—	C. 1x1	9.5	—	—	—	—
84573	unossified	♂	small	not enl.	—	9.8	—	—	—	—
84574	ossified	♀	—	—	C. 2x1	10.5	—	—	—	—
84575	ossified	♀	—	—	C. 2x1	9.2	—	—	—	—
<i>Herpilochmus axillaris</i>										
84851	ossified	♂	6x4	not enl.	—	11.0	Brown	Max. black Mand. blue-grey	Grey	P&P
<i>Myiophobus phoenicomitra</i>										
85129	90% ossified	♂	7x5	not enl.	—	9.0	—	—	—	—
85130	ossified	♀	—	—	4x2	10.7	—	—	—	—
86372	ossified	♂	—	—	5x3	11.5	—	—	—	—
86373	90% ossified	♀	—	—	C. 3x2	11.5	—	—	—	—
85137	unossified	♂	—	—	1x1	10.4	—	(typical in all specimens)	—	—
85982 (alcoholic)	—	—	—	—	—	10.0	—	—	—	—
<i>Myiophobus roraimae</i>										
85135	ossified	♂	—	—	C. 6x3	11.5	Brown	Max. black Mand. pale orange	Dark brown	P&P
85136	ossified	♀	—	—	C. 5x3	11.2	—	—	—	—
85138	30% ossified	♂	—	—	—	13.0	—	(typical in all specimens)	—	JPO
68002	—	—	—	—	6x3	—	—	—	—	TSS
85134	ossified	♀	—	—	4x3	13.0	—	—	—	—

LSUMZ no.	Skull	Sex	Ovary (mm)	Ova (mm)	Testes (mm)	Weight (g)	Iris	Bill	Tarsi	Coll.
<i>Myiophobus cryptoxanthus</i>										
86374	ossified	♂	—	—	c. 2x1	11.0	—	—	—	P&P
<i>Rhynchoyctes fulvipes</i>										
85154	ossified	♀	6x5	not. enl.	—	27.5	Brown	Max. black Mand. white	Pale blue	P&P
<i>Poecilotricus capitale</i>										
85161	75% ossified	♀	4x4	—	—	8.0	Reddish- brown	Max. black Mand. pale orange	Yellow olive	P&P
78775	ossified	♂	—	—	"small"	8.0	—	—	—	TP
85089	—	—	—	—	—	—	—	—	—	JY
<i>Tangara chrysotis</i>										
85582	ossified	♂	—	—	c. 6x4	23.0	Brown	Black	Grey	P&P
<i>Calocbaetes corcineus</i>										
82246	ossified	—	—	not. enl.	—	42.0	—	—	—	—
82247	ossified	♂+♀	6x3	sev. c. 1.5	—	49.0	Brown	Max. black Mand. silver-grey w/black tip	Dark grey	JPO
69575	—	♂	—	—	c. 2x1	—	—	—	—	JPO
69574	—	♂	c. 3x2	not. enl.	—	—	—	—	—	JWE
85514	—	♂	—	—	c. 3x2	45.0	—	—	—	TSS
86650 (skeleton)	—	—	—	—	(L) 6x5 (R) 4x3	48.0	—	(typical in all specimens)	—	—
<i>Chlorospingus flavicularis</i>										
85462	ossified	♂	—	—	10x7	27.1	Pale yellow w/reddish suffusion	Black Mand. base blue-grey	Dark brown	P&P
85463	ossified	♀	—	—	c. 5x3	25.0	—	—	—	—
85464	ossified	♂	13x9	sev. c. 3x2	—	25.2	—	—	—	—
85465	ossified	♂	5x4	not. enl.	—	23.0	—	—	—	—
85466	ossified	♂	—	—	5x3	26.0	—	—	—	—
85467	ossified	♂	9x4	sev. c. 2x2	—	26.0	—	—	—	—
86429 (skeleton)	—	—	—	—	10x6	27.3	—	—	—	—
<i>Chlorospingus canicularis</i>										
85468	ossified	♀	—	—	7x5	18.5	Reddish- chestnut	Black Mand. base blue-grey	Pale grey	P&P
85469	ossified	♂	4x4	not. enl.	—	16.5	—	—	—	—
85470	ossified	♀	—	—	c. 4x3	17.0	—	—	—	JPO
62596	—	♂	—	—	small	—	—	—	—	JH
62597	—	—	—	—	—	—	—	—	—	—
62598	—	—	c. 5x3	—	—	—	—	—	—	—

species flocks in dense second-growth at the forest edge 1-10 m above ground. It was also occasionally seen in the canopy, especially in fruiting trees. The song is a loud, musical "wheet-chew-wheet-wheet-wheet-chew" or a shorter "chip-weet-weet-weet", and members of flocks utter a variety of "chip" and "seet" notes. We collected 7 specimens, most of which were in breeding condition or had recently bred (Table 1). Like *Tangara chrysotis*, this bush-tanager is an "indicator species" for the ill-defined "Upper Tropical Zone" of humid, mossy forest on the lower slopes of the Andes. Above 1220 m, *C. flavigularis* is replaced in the Department of San Martín by its very similar-looking congener *C. parvirostris*, which is equally common where it occurs. *C. flavigularis* is found from Panama south at least to central Peru (Storer 1970).

CHLOROSPINGUS CANIGULARIS Ash-throated Bush-Tanager. Like the last species, this bush-tanager was also common, but was noted mainly from mid-heights to the canopy of mature forest. Up to 10 individuals were often observed with flocks of other tanagers, searching mosses on slender branches, gleaning leaves and feeding on small fruits. The song differs from that of its similar congener *C. ophthalmicus* in being less musical and more rapidly uttered (see O'Neill & Parker 1981); a typical song phrase of *canigularis* consists of an accelerating series of chips having a distinctly raspy quality. Three specimens were obtained at Afluente and there are 3 additional examples in the LSUMZ collected by J. P. O'Neill and J. Hebrard in August 1967 in the Cordillera Azul (1600 m), Dpto. Huánuco (Table 1). *C. canigularis* was known in Peru only from north of the Marañón River in Dpto. Cajamarca (Storer 1970). The above specimens extend the known distribution of this tanager southward along the base of the Andes about 500 km.

APPENDIX

List of bird species and their relative abundance at Afluente, Peru.

This is one of only 3 locality lists to be published for the Andean cloud forest zone extending from Venezuela to Bolivia

C = recorded daily in moderate to large numbers, generally more than 10 individuals;
U = recorded daily or every other day in small numbers, generally far less than 10 individuals; R = recorded once per 3 days or less; L = one record, or one individual noted less than 3 times.

Crypturellus obsoletus, R; *Elanoides forficatus*, L; *Accipiter striatus*, L; *Buteo magnirostris*, U; *Buteo albigula*, L; *Leucopternis albigollis*, L; *Morphnus guianensis*, L; *Micrastur ruficollis*, R; *Pipile pipile*, R; *Aburria aburri*, U; *Odontophorus* sp., L; *Tringa solitaria*, U; *Actitis macularia*, U; *Columba plumbea*, U; *Aratinga (leucophthalmus)*, R; *Pionus sordidus*, C; *Amazona mercenaria*, U; *Praya cayana*, R; *Pulsatrix melanota*, R; *Streptoprocne zonaris*, U; *Cypseloides rutilus*, C; *Chaetura cinereiventris*, C; *Doryfera johannae*, R; *D. ludovicianae*, C; *Phaethornis guy*, C; *Phaethornis* sp., R; *Eutoxeres aquila*, U; *Klais guimetti*, U; *Popelairia popelairii*, R; *Chlorostilbon mellisugus*, R; *Thalurania furcata*, U; *Adelomyia melanogenys*, C; *Phlogophilus hemileucurus*, U; *Heliodoxa leadbeateri*, C; *Ocreatus underwoodii*, U; *Agelaiocercus kingi*, U; *Schistes geoffroyi*, R; *Heliothryx aurita*, L; *Pbaromacrus antisianus*, U; *Trogon personatus*, U; *Chloroceryle americana*, L; *Micromonacha lanceolata*, L; *Aulacorhynchus derbianus*, L; *Rampastos ambiguus*, C; *Picumnus steindachneri*, C; *Piculus rubiginosus*, C; *Veniliornis fumigatus*, C; *Phloeocastes baematogaster*, R; *Dendrocincla fuliginosa*, L; *Sittasomus griseicapillus*, C; *Xiphocolaptes promeropirhynchus*, L; *Xiphorhynchus triangularis*, C; *Cranioleuca curtata*, U; *Xenerpestes singularis*, U; *Premnoplex brunescens*, C; *Syndactyla subalaris*, L; *Anabacerthia striaticollis*, C; *Philydor rufus*, U; *Automolus rubiginosus*, R; *Thripadectes melanorhynchus*, U; *Xenops rutilans*, C; *Thamnopbilus palliatus*, U; *Thamnistes anabatinus*, U; *Dysithamnus mentalis*, C; *Myrmotherula schisticolor*, C; *Hersipolochmus axillaris*, U; *Cercomacra nigrescens*, U; *Hylophylax naevia*, L; *Formicarius (rufipectus)*, L; *Grallaria (guatimalensis)*, L; *Grallaria flavirostris*, R; *Conopophaga castaneiceps*, L; *Scytalopus femoralis*, U; *Laniisoma elegans*, U; *Pipreola (frontalis)*, L; *Ampelioides tchudii*, L; *Pachyrhamphus versicolor*, C; *Tityra semifasciata*, U; *Pyroderus scutatus*, L; *Cephalopterus ornatus*, U; *Rupicola peruviana*,

C; *Masius chrysoterpis*, C; *Chloropipo unicolor*, U; *Piprites chloris*, R; *Schiffornis turdinus*, U; *Sayornis nigricans*, U; *Colonia colonus*, R; *Tyrannus melancholicus*, C; *Legatus leucophthalmus*, U; *Conopias cinchoneti*, U; *Myiozetetes similis*, L; *Rhytipterna simplex*, R; *Myiarchus cephalotes*, L; *Myiarchus tuberculifer*, R; *Contopus fumigatus*, C; *Myiobius villosus*, U; *Myiobius ornatus*, C; *Pyrrhonyx cinnamomea*, C; *Myiophobus phoenicomitra*, U; *Myiophobus cryptoxanthus*, L; *M. roraimae*, R; *Platyrinchus mystaceus*, C; *Tolmomyia ulphurescens*, U; *Rhynchocyclus fulvipes*, R; *Todirostrum cinereum*, U; *P. capitale*, R; *Lophotriccus pileatus*, C; *Pseudotriccus (pelzelni)*, L; *Pogonotriccus ophthalmicus*, C; *Serpophaga cinerea*, C; *Mecocerculus calopterus*, U; *Tyranniscus viridiflavus*, C; *Leptopogon superciliosus*, C; *Mionectes olivaceus*, C; *M. striaticollis*, U; *Notiochelidon cyanoleuca*, C; *Stelgidopteryx ruficollis*, U; *Cyanocorax yncas*, U; *Odontorchilus branickii*, U; *Troglodytes aedon*, C; *Henicorbina leucophrys*, C; *Cypborhinus thoracicus*, U; *Catharus dryas*, C; *Platycichla leucops*, C; *Turdus albicollis*, R; *Smaragdolanus leucotis*, C; *Vireo gilvus*, U; *Hylophilus olivaceus*, R; *Psarocolius* sp., L; *Parula pitiayumi*, C; *Myioborus miniatus*, C; *Basileuterus tristriatus*, C; *B. rivularis*, U; *Coereba flaveola*, C; *Diglossa glauca*, C; *Iridophanes pulcherrima*, L; *Dacnis cayana*, C; *D. lineata*, C; *Chlorophonia cyanea*, C; *Euphonia xanthogaster*, C; *E. mesochrysa*, R; *Chloroceryza calliparaea*, C; *Tangara chilensis*, C; *T. schrankii*, C; *T. punctatus*, C; *T. arthus*, C; *T. xanthocephala*, C; *T. chrysotis*, U; *T. parzudakii*, R; *T. cyanotis*, U; *T. cyanicollis*, C; *T. gyrola*, U; *Thraupis episcopus*, U; *T. palmarum*, C; *T. cyanocephala*, R; *Ramphocelus nigrogularis*, L; *Calochaetes coccineus*, U; *Piranga leucoptera*, C; *Lanio fulvus*, U; *Creurgops verticalis*, U; *Chlorospingus flavigularis*, C; *C. canicularis*, C; *Salpator maximus*, R; *Pitylus grossus*, L; *Sporophila castaneiventris*, R; *Atlaptetes brunneinucha*, U; *Myospiza aurifrons*, U; *Carduelis olivacea*, U.

Acknowledgements: We thank J. V. Remsen, Jr. for reviewing this manuscript. J. P. O'Neill generously allowed us to incorporate several of his unpublished records. Reyes Rivera A. was an indispensable aid during fieldwork in San Martín. We are also indebted to John S. McIlhenny for his support of LSUMZ fieldwork. Finally, we thank the Dirección General Forestal y de Fauna, Ministerio de Agricultura, Lima, Peru, for its continuing interest in and support of LSUMZ field studies.

References:

- Cory, C. B. & Hellmayr, C. E. 1927. Catalogue of birds of the Americas. *Field Mus. Nat. Hist., Zool. Ser.* Vol. 13, part 5: 1-517.
- Fitzpatrick, J. W. 1979. Foraging behavior of Neotropical tyrant Flycatchers. *Condor* 82: 43-57.
- Meyer de Schauensee, R. 1966. *The Species of Birds of South America and their Distribution*. pp. i-xvii, 1-577. Livingston: Narberth, Pennsylvania.
- O'Neill, J. P. & Graves, G. R. 1977. A new genus and species of owl (Aves: Strigidae) from Peru. *Auk* 94: 409-416.
- O'Neill, J. P. & Parker, T. A., III. 1981. New subspecies of *Pipreola riefferii* and *Chlorospingus ophthalmicus*. *Bull. Brit. Orn. Cl.* 101(2): 294-299.
- Parker, T. A., III & Parker, S. A. 1980. Rediscovery of *Xenerpestes singularis*. *Auk* 97: 203-205.
- Storer, R. W. 1970. Thraupinae. In *Check-list of Birds of the World*. Vol. XIII. Cambridge, Mass.
- Terborgh, J. W. & Weske, J. S. 1975. The role of competition in the distribution of Andean birds. *Ecology* 56: 562-576.
- Traylor, M. A., Jr. 1979. Tyrannidae. In *Check-list of Birds of the World*. Vol. VIII. Cambridge, Mass.

Address. Theodore A. Parker, III and Susan Allen Parker, Museum of Zoology, Louisiana State University, Baton Rouge, Louisiana 70893, U.S.A.

©British Ornithologists' Club 1982

The case for the retention of *Anaplectes* as a separate genus.

by J. H. Elgood

Received 29 September 1981

The genus *Malimbus* is sufficiently distinctive to have attracted the attention of several ornithologists. Moreau (1958) stated 'the case for retaining

Malimbus as a separate genus is not strong', maintaining that it is separated from *Ploceus* 'by nothing more than the red carotenoid pigment in the plumage'. But it must be remembered that Moreau later (1960a,b) took a fairly extreme view, reducing the weaver species into a very much smaller number of genera than had been formerly recognised.

The fundamental raised issue is what constitutes a genus? Biologists agree that a genus is a group of species thought to have had a close common ancestry and that are, usually, quite distinct and separable from other groups of species in the same widely accepted next higher taxon, whether tribe, sub-family or family. Some genera may now be monotypic, with a single surviving species, and for these there can be no case for merging each in a nearly related polytypic genus. On the other hand, where a taxon is thought to be still evolving, as with the Ploceinae, some evolutionary trends may be represented by a single known species, thus also giving rise to a monotypic genus. In the Ploceinae the earlier taxonomic 'splitters' had undoubtedly gone too far in erecting an array of genera to group somewhat similar looking species, but the 'lumpers' seem now to have moved equally too far in the opposite direction, being apparently unwilling to admit monotypic genera for divergent forms. Thus in addition to the merge of former *Anaplectes* with *Malimbus*, with which we are here concerned, there has also been, for example, (following Moreau) the merge of former *Brachycope* with *Quelea* (Hall & Moreau 1970) or with *Euplectes* (White 1963) and of former *Notiospiza* with *Ploceus* (Hall & Moreau, White). If the genus concept is to have value in taxonomy it is far preferable to give full generic status to a clearly divergent form rather than blur an otherwise clear-cut related genus. In my view, that *Anaplectes* should be excluded from *Malimbus*, is a case in point.

The question then is whether the 3 (or 4) subspecies previously grouped in the genus *Anaplectes* by earlier workers (Sharpe 1890, Sclater 1930, Bates 1930, Bannerman 1949, Mackworth-Praed & Grant 1955, 1963, 1973), but merged by White (1963) (following the recommendation of Moreau 1960a and since followed by others such as Morony *et al.* 1975) into a single species *Malimbus rubriceps* are in fact sufficiently distinctive, and by implication through separate ancestry, to warrant separation from *Malimbus* and the retention of the genus *Anaplectes*.

It is noteworthy that originally Moreau (1958) kept *Anaplectes* separate from *Malimbus* and was therefore able succinctly to define *Malimbus* as a group of species (i) 'confined to or closely associated with, the lowland equatorial rain-forest of Western Africa, for the most part between about 5°N and 5°S'; (ii) 'almost exclusively insectivorous' and (iii) having 'plumages that are alike in being black and red'. The *Anaplectes* forms do not comply with either the first or last point, and typical *Malimbus*, in fact, consume a wider range of foods than is suggested by Moreau's second distinction, which in any case, is not exclusive to *Malimbus*.

With regard to distribution, Hall & Moreau (1970) show such striking allopatry between *Malimbus* and *Anaplectes* that an extension of the allopatric superspecies concept might lead to the proposition that the 2 genera be thought of as a 'supergenous', their presumably mainly insectivorous common ancestor having given rise to 2 diverging forms, a 'pro-*Malimbus*' and a 'pro-*Anaplectes*', adapting to fill 2 niches, in rain-forest and savanna respectively. That the forest genus was more successful than the savanna is suggested by

the array of some 10 species of *Malimbus* as opposed to the single species of *Anaplectes*.

Coming to Moreau's second point, the food of *Malimbus*, many weavers have a fairly wide range of feeding choices. Although the Ploceinae are basically graminivorous, most feed on insects to some extent, even if only seasonally while alate termites are readily available, or to meet the protein needs of ovulation and of nestlings (Ward 1965a,b). Several species of *Malimbus*, though apparently never graminivorous, certainly utilise some vegetable food. (It should be recalled that grasses are virtually absent from tropical rain-forest.) Thus *M. rubricollis*, *ibadanensis* and *scutatus* (and probably others) also include strippings from the fruit of the oil-palm *Elais guineensis* in their diet. The feeding habits of *M. rubriceps* (*Anaplectes*) have been inadequately reported, but it is probably mainly insectivorous. I have never seen it on the ground nor on grass heads, only searching the foliage and twigs of savanna trees, though McLachlan & Liversidge (1978) mention seeds as well as insects.

As to Moreau's third distinction, to anyone familiar with malimbos in the field, their black and red plumage, typically with bold clear-cut patterns, together with slim curved black bills, make them instantly recognisable; as clearly defined a generic taxon as in any branch of vertebrate zoology. Nevertheless some *Malimbus* species do not fully conform. Two species, *M. coronatus* and *M. cassini*, have entirely black females, though the males are typical malimbos with a red crown and a mainly red head, neck and breast respectively. Again both sexes of *M. racheliae* have a plumage pattern closely similar to that obtaining in the corresponding sex of the typically coloured *M. scutatus*, but with yellow instead of scarlet under the tail and with orange-yellow bordering the red breast area of both sexes and the red head of the male. Similarly the imperfectly known and recently described *M. ballmanni* (Wolters 1974) has both sexes with a pattern somewhat resembling the corresponding sex of *scutatus* but with the coloured areas of the head yellow with a faint chestnut wash and with bright yellow under the tail. This new species was first located in forest in Ivory Coast, but unfortunately the publication was not noticed in *Ibis* abstracts so that, in his review of *Malimbus*, Field (1979) who had sighted *ballmanni* in a small forest area of Sierra Leone at Gola, overlooked Wolter's description and thought he had found a new species for which he proposed the name *M. golensis* once specimens eventually came to hand. Prigogine (1981) has since stated that *golensis* is a synonym of *ballmanni*. Field described the under tail coverts as being 'daffodil yellow', but assures me (pers. com.) that despite many *Ploceus* weavers being similarly black and yellow, *ballmanni* (= *golensis*) distinctly had the general appearance (jizz in colloquial parlance) of a typical malimbe. Another comparatively recently described malimbe, *M. ibadanensis* (Elgood 1958), was found to differ from typical *Malimbus* species in that most individuals have an occasional red feather within the black areas of the plumage and this was thought to point to a possible hybrid origin, with *M. scutatus* and *M. rubricollis* as the possible parents. However, Hall & Moreau (1970) accepted it as a full species forming a superspecies with *M. erythrogaster*.

Mention should also be made of another weaver, the so-called 'Yellow-legged Malimbe' *M. flavipes* (Mackworth-Praed & Grant 1973), a bird first described by Chapin (1916). Both sexes are essentially black but with 'feet

and toes yellow'. Few, if any, authorities would want to place this species in *Malimbus* any longer, most now regarding it as a *Plocus*, though there would seem to be some case for placing it in another monotypic genus *Rhinoplocus* (Gyldenstolpe 1924).

Thus, apart from the departures from the characteristic black and red plumage noted above, it may be said that all true malimbos (*Malimbus sensu strictu*) have a clear cut characteristic generic plumage pattern, with general shape and attitude (jizz) quite distinct from those of *Plocus* species. *Anaplectes* does not conform with them in any way. The females of all its races lack both black and red: the males have red heads, and one race (*leuconotos* = *melanotis*) has black cheeks, but otherwise the plumage is mainly brown above and whitish below. In short, male *Anaplectes*, with some red in the plumage, does not resemble any of the savanna species of *Plocus*, suggesting it has had an ancestry separate from both *Plocus* and *Malimbus*.

Two important points of general appearance remain. All true malimbos have black bills (bluish-black in *M. nitens*) but both sexes in *Anaplectes* have rosy-crimson bills in all seasons. Again *Anaplectes* differs from all true malimbos in having distinct eclipse and nuptial plumages, with consequent double moult of most of the contour feathers, a phenomenon known in many other savanna weavers (*Plocus*, *Quelea*, *Euplectes* – including former *Coliuspasser*) but in no true *Malimbus*. The perennial mode of dress of *Malimbus* can be correlated with its distribution in the rain-forest zone 5° either side of the Equator, where seasonal differences in climate and day length are relatively slight. On the other hand *Anaplectes* ranging much farther north and south in savanna, is exposed to sharply demarked wet and dry seasons and has, in consequence, marked seasonal plumage change.

Several workers have invoked nest structure and mode of construction as throwing light on weaver affinities (Crook 1960, Collias & Collias 1964). A wide range of nest types is found amongst the true malimbos, ranging from the 'globular' nest of *M. nitens* to the extreme 'retort shaped' nests of *M. scutatus* and *M. cassini* (Crook 1960), these last having a tubular entrance tunnel of up to 0.75 m in length, giving the nest the appearance of an inverted bed-sock. The main features of the nest of *Anaplectes* are: (i) an unusual, rope-like, method of attachment of the nest roof to the tip of a branch of, typically, a broad-leaved tree, 'pensile from the roof' (Collias & Collias 1964), met otherwise in only a few species of *Plocus*; (ii) although basically a retort shaped type, the mode of suspension and the partial incorporation of the entrance tunnel into the nest contour tend to give it an overall spindle shape; and (iii) it is constructed, mostly by the male, very largely of leaf petioles and mid-ribs (and sometimes whole leaves) of broad leaved trees, often from the tree supporting the nest. Collias & Collias (1964), who retain the name *Anaplectes*, make special mention of 'the frequent use of alternative reverse winding', which they say is absent from the nests of other *Malimbus* species, but is seen in some *Plocus* species. Of some interest is the fact that *Anaplectes* is perhaps the only weaver occasionally to attach its nest to artificial supports such as telegraph wires (Bannerman 1949) and certainly no malimbe has been found to do so.

Data from egg-shell patterns and microscopic structure, and from egg-white and blood proteins is mostly undetermined or too scanty for consideration.

Anaplectes (*M. rubriceps*) therefore differs significantly from all other malimbos as follows:-

- (i) it is a latitudinally wide-ranging savanna form, whereas malimbos are confined to the sub-equatorial rain-forest zone;
- (ii) it has plumage quite different from the typical black and red of malimbos;
- (iii) both sexes have a rosy-crimson bill (developing early in life) as opposed to the black bill of malimbos;
- (iv) it has seasonal plumage changes, like many other savanna weavers, whereas malimbos have perennial plumage.

In feeding it certainly resembles malimbos in being insectivorous, perhaps more strictly so than most malimbos.

Nest structure and mode of construction suggest separation from both *Malimbus* and *Plocus* but perhaps rather nearer to *Plocus*.

In conclusion, there are emphatically good reasons for removing *rubriceps* from *Malimbus* and re-establishing it in the monotypic genus *Anaplectes*. If further it is considered to be a single species with 3 or 4 races, it should be named *Anaplectes melanotis*, this being the earliest name attached to *Anaplectes* (Lafresnaye 1839), with precedence over *rubriceps* (Sundevall 1850) and *leuconotos* (Müller 1851).

Acknowledgements: I wish to thank Mr C. W. Benson, Mr G. D. Field and Dr J. F. Monk for their comments, advice and encouragement during the preparation of this paper.

References:

- Bannerman, D. A. 1949. *The Birds of Tropical West Africa*. Vol. 7. Oliver & Boyd: London.
- Bates, G. L. 1930. *Handbook of the Birds of West Africa*. Hale, Sons & Danielson: London.
- Chapin, J. P. 1916. Birds of the Belgian Congo. *Bull. Am. Mus. Nat. Hist.* 35: 27.
- Collias, N. E. & Collias, E. C. 1964. Evolution of nest-building in the weaver-birds (Ploceidae). *Univ. Calif. Publ. Zool.* 73
- Crook, J. H. 1960. Nest form and construction in certain West African weaver-birds. *Ibis* 102: 1-25.
- Elgood, J. H. 1958. A new species of *Malimbus*. *Ibis* 100: 621-624.
- Field, G. D. 1979. A new species of *Malimbus* sighted in Sierra Leone and a review of the genus. *Malimbus* 1(1): 2-13.
- Gyldenstolpe, N. 1924. Zoological results of the Swedish Expedition to Central Africa 1921. *Birds. Kungl. Svensk. Vet.-sak. Hand.* 3rd Ser. 1(3): 36.
- Hall, B. P. & Moreau, R. E. 1970. *An Atlas of Speciation of African Passerine Birds*. London: British Museum (Natural History).
- Lafresnaye, F. de 1839. *Rev. Zool.* p. 20.
- Mackworth-Praed, C. W. & Grant, C. H. B. 1935, 1963, 1973. *African Handbook of Birds*. Longman: London.
- McLachlan, G. R. & Liversidge, R. 1978. *Roberts' Birds of South Africa*. Cape Town.
- Moreau, R. E. 1958. The *Malimbus* spp. as an evolutionary problem. *Rev. Zool. Bot. Afr.* 57: 241-255.
- 1960a. Conspectus and classification of the Ploceine weaver-birds. *Ibis* 102: 298-321, 443-471.
- 1960b. Ploceidae. In Peters' *Check-list of Birds of the World*. Vol. 15.
- Morony, J. J. Jr., Bock, W. J. & Farrand, J. Jr. 1975. *Reference List of the Birds of the World*. Amer. Mus. Nat. Hist.: New York.
- Müller, J. W. von. 1851. *Naumannia* 1(4): 27-29.
- Prigogine, A. 1981. A new species of *Malimbus* from Sierra Leone. *Malimbus* 3(1): 55.
- Slater, W. L. 1930. *Systema Avium Aethiopicarum*. British Ornithologists' Union: London.
- Sharpe, R. B. 1890. *Catalogue of the Birds of the British Museum*.
- Sundevall, C. J. 1850. *Oefv. K. Sv. Vet. AK. Föbr.* 7.

- Ward, P. 1965a. Feeding ecology of the Black-faced Dioch *Quelea quelea* in Nigeria. *Ibis* 107: 173-214.
- 1965b. The breeding biology of the Black-faced Dioch *Quelea quelea* in Nigeria. *Ibis* 107: 326-349.
- White, C. M. N. 1963. *A Revised Check List of African flycatchers . . . weavers and waxbills*. Lusaka: Govt. Printer.
- Wolters, H. E. 1974. Aus der ornithologischer Sammlung der Museum Alexander Koenig 3. *Bonn. Zool. Beitr.* 25(4): 283-291.
- Address: J. H. Elgood, 26 Walkford Way, Highcliffe, Dorset, BH23 5LR, England.
- © British Ornithologists' Club 1982.

The status of the Rough-winged Swallow *Stelgidopteryx ruficollis* in Suriname

by F. Haverschmidt

Received 30 September 1981

The Rough-winged Swallow *Stelgidopteryx ruficollis* is a rather common breeding bird on sandy ground in Suriname, nesting in isolated pairs in burrows in low sandwalls and often in descending tunnels in level ground. I do not know whether it ever digs the burrow itself, but it regularly nests in burrows of the Swallow-wing *Chelidoptera tenebrosa*, which is a characteristic bird of this habitat.

Breeding activity starts in February and lasts into June:- males with enlarged gonads 13 Feb; female in burrow with finished nest ready for eggs, 26 Feb; nest with 4 heavily incubated eggs, 9 Apr; nest with 2 nestlings and 1 egg, 8 Apr; nestlings just having left the nest, being fed by their parents, 22 May and 12 June; nest with 2 nestlings and 1 egg, 6 June (Haverschmidt 1968).

During my residence in Suriname, 1946-1968, I observed yearly near my home on the left bank of the Suriname River just outside Paramaribo, where this swallow does not breed, loose groups of *S. ruficollis* hurrying northward, following the river downstream. They were certainly not migrating in the proper sense, but they behaved like Barn Swallows *Hirundo rustica* on migration, flying low and rapidly. The majority came over in the late afternoon between 1630 and 1800, and I observed these afternoon flights all around Paramaribo and even over the centre of the city. Apparently they were heading for a communal roost, where the total number must have been very great. I observed these flights between February (earliest date 18 Feb 1962) and October (latest date 6 Oct 1957). The greatest numbers were seen during March and April through well into August. Sometimes a number settled down on telephone wires, where it was easy to collect specimens. All were moulting their primaries and in non-breeding conditions. These facts suggested to me that 2 different populations were involved, one resident and breeding from February into June, and a second one composed only of immigrants from February to October.

In the report of a collection of Surinam birds collected 1912-1914, Bangs & Penard (1918) described a new race, *Stelgidopteryx ruficollis caccabatus*, (from a series of 7 birds collected in the vicinity of Paramaribo in April, May and June 1913 and 1914, as being "similar to the nominate *ruficollis*, but the

whole upperparts including wings and tail much darker, more blackish, less brownish; size slightly smaller and differing from *uropygialis* in having the rump not conspicuously paler than the back, but the upper parts of about the same colour" (quoted *verbatim* from original description). Later investigation has in fact shown that so-called *caccabatus* was larger, not smaller, than nominate *ruficollis*.

Zimmer (1955) rejected this race as the few Surinam specimens at hand then easily matched a series of over 200 *ruficollis* and he failed to substantiate the validity of *caccabatus*, which he believed should be submerged. In Peter's *Checklist of Birds of the World* (1960), in which the American Swallows were recorded by E. E. Eisenmann, *caccabatus* is, however, listed and is said to inhabit the Gran Sabana region of southeastern Bolivar in Venezuela, Guyana, Suriname and French Guiana, its southern limits being not known.

The type locality of *caccabatus* obtained on 19 June 1913 can be more specifically identified. The type was collected by Egbert Graanoogst, one of the principal collectors for Penard, who had a farm at "De Tweede Rijweg" just west of Paramaribo, a grassland area where cattle were kept. It is a place I know well—a very unlikely spot for nesting Rough-winged Swallows and in the very area where the afternoon flights of this bird are such a regular feature. I therefore wondered whether *caccabatus* had been described from one of these migrants.

At my request the series of *Stelgidopteryx* which I had collected and which are now in the Leiden Museum, consisting both of breeding birds and the immigrants, was sent to Mr. E. E. Eisenmann at the American Museum of Natural History at New York. Assisted by F. Farrand, he kindly compared them with other material from Suriname. Moreover the type specimen and series of *caccabatus* were examined in the Museum of Comparative Zoology (M.C.Z.) at Cambridge, Mass. by Dr. Lester Short and at my request also by Dr. R. Paynter.

Since in swallows the 9th primary (the longest) of moulting birds is either only partly grown or very worn, the 7th primary (counting from inside) was also measured.

TABLE I
Length of 7th and 9th primaries of *Stelgidopteryx ruficollis* in Suriname

		7th Primary (mm)		9th Primary (mm)	
<i>S. ruficollis</i> (in Leiden Museum and AMNH)	Breeders (n=10)	6 ♂♂	92-99 (95.6)	6 ♂♂	100-109 (105)
		1 ♀	91	2 ♀♀	99, 100
		2 0 0	93, 95	2 0 0	100, 105
	Immigrants (n=8)	3 ♂♂	100-104 (102.3)	3 ♂♂	112-114 (113)
		3 ♀♀	98-107 (105.6)	4 ♀♀	(part sheath)
2 0 0			1 0	105	
<i>S. r. caccabatus</i> (in M.C.Z.)	Holotype	19.vi.13	♂ 99		115
		11.iv.14	♂ 98		117 (worn)
		4.v.14	0 101		111
		11.v.14	♂ 98		107
		11.iv.14	♀ 101		112
		Average	99.8	Average	112.4

Notes: 0 = unsexed

Sex of the specimens was copied from the original labels.

Weights: 9 breeding ♂♂ 14-18 (15)g; 2 breeding ♀♀ 14.5, 15g.

12 immigrant ♀♀ 14-18 (16.3)g; 4 immigrant ♀♀ 15-17 (15.9)g.

Eisenmann and Farrand both agree with me that there must be 2 populations occurring in Suriname, a breeding one (specimens obtained between 26 February and 12 June) and a migrant one (specimens between 11 April and 11 August) the last population presumably originating in the temperate zone of southern South America and spending the austral winter within the tropics. All the migrant specimens are moulting their primaries (with numbers 5-8 being freshly full grown and the remainder in sheath, partly grown or old), which agrees with the southern hemisphere schedule of migratory swallows. The primaries run longer in these migrants and their weights average greater than in the Suriname breeding birds, the new feathers making the wings and tail look darker. On the other hand, none of the breeding birds (found to have enlarged gonads or taken in the nest burrow) has moulting primaries. In Dr. Eisenmann's opinion the race *caccabatus* was plainly based on the migratory southern population and not the breeding birds and is presumably, therefore, a synonym of the nominate *ruficollis*. This would leave the breeding birds unnamed, but in view of the fact that the size differences may be clinal and are not clearly marked, and in the absence of obvious colour characters, taxonomic recognition does not seem worthwhile or necessary.

Acknowledgements: I am greatly indebted to Dr. E. E. Eisenmann and F. Farrand for examining the specimens from Suriname, but above all to Dr. Eisenmann for permitting me to publish his findings and conclusions; to Dr. Lester L. Short for examining the type and type series in the M.C.Z. at Cambridge, Mass. and to Raymond A. Paynter for measuring these specimens.

References:

- Bangs, O. & Penard, T. E., 1918. Notes on a collection of Surinam Birds. *Bull. Mus. Comp. Zool.* 62, no. 92: 83.
 Haverschmidt, F. 1968. *Birds of Surinam*. Edinburgh & London: Oliver & Boyd.
 Peters, J. L. 1960. *Check-List of Birds of the World*. Vol. 3. Cambridge, Mass: Harvard University Press.
 Zimmer, J. T. 1955. Studies on Peruvian Birds. No. 66. The Swallows. *Am. Mus. Novit.* 1723: 16.

Address: F. Haverschmidt, Wolfskuilstraat 16, 7731 AT Ommen, Holland.

©British Ornithologists' Club 1982.

The taxonomic status of the Canary Islands Oystercatcher *Haematopus (niger) meadewaldoi*

by P. A. R. Hockey

Received 18 August 1981

The taxonomic status of Meade-Waldo's Black Oystercatcher or Canarian Black Oystercatcher *Haematopus niger meadewaldoi* Bannerman (1913) of the Canary Islands remains an enigma. Apart from a white patch in the wing, the bird is similar in plumage and soft part colouration to the African Black Oystercatcher *H. moquini* (Bannerman 1913). Three hypotheses have been proposed to explain its taxonomic status: either it is a melanistic subspecies of *H. ostralegus* (Stresemann 1927); or a distinct subspecies of the African Black Oystercatcher *H. moquini* Bonaparte (1856) (Bannerman 1913, 1963); or individuals recorded in the Canary Islands represent long-distance vagrants

of the southern African population of *H. moquini* (Etchécopar & Huë 1964). This paper aims to examine these 3 hypotheses by considering (a) the extent of vagrancy and the distribution of extralimital records of *H. moquini*; (b) mensural and plumage differences between *moquini* and *meadewaldoi*; and (c) habitat preference and biology of the 2 populations.

TABLE 1

Synonymy of *Haematopus moquini* Bonaparte

- Haematopus niger* Cuvier 1816 *Regné Anim.* 1: 469—Cape of Good Hope. *Nec H. niger* Pallas 1811 *Zoogr. Ross.-Asiat.* 2: 131 = *H. bachmani* Audubon 1838 *Birds Amer.* ed. 4, pl. 427.
- Haematopus ostralegus capensis* A. Lichtenstein 1823 *Verz. Doubl. Zool. Mus. Berol.* p. 73—Cape of Good Hope. *Nomen nudum.*
- Haematopus moquini* Bonaparte 1856 *Comp. Rend. Acad. Sci. Paris* 43: 1020—Africa. *Nom. nov. pro H. niger* Cuvier *nec* Pallas. Type locality restricted to Cape of Good Hope by Traylor 1960 *Publ. Cult. Co. Diam. Ang.* 51: 147.
- Haematopus capensis* Sharpe in 1884 Sharpe & Layard's *Birds S. Africa* p. 672—Cape of Good Hope. By providing a description Sharpe made Lichtenstein's name available but its authorship and date is Sharpe 1884.

NOMENCLATURE

Meade-Waldo's Black Oystercatcher originally was referred to as *H. capensis*, now a synonym of *H. moquini* (Table 1) (Meade-Waldo 1889). Bannerman (1913), on the basis of 4 specimens collected between 1890 and 1913, named the form *H. niger meadewaldoi*, *H. niger* also now being a synonym of *H. moquini*. Stresemann (1927) and Peters (1934), on the contrary, considered both *moquini* and *meadewaldoi* to be subspecies of the European *H. ostralegus*. In recent literature, the Canary Island oystercatcher has been referred to as *H. moquini meadewaldoi* (Bannerman 1963, Vaurie 1965, King 1979).

VAGRANCY IN *H. moquini*

The breeding range of *H. moquini* extends from Seal Island, South West Africa/Namibia (26° 37'S, 15° 19'E) (Cooper *et al.* 1980) round the coast to Mazeppa Bay, Transkei (32° 29'S, 28° 39'E) (Summers & Cooper 1977).

The northern limit of its normal non-breeding range may be considered as the Hoanib estuary, South West Africa/Namibia (19° 30'S, 12° 50'E), where 9 birds were seen in October 1978 and January 1979 (R. Loutit *in litt.*). East of Transkei there are only 4 records which unequivocally refer to *H. moquini*, all in Natal, the most northerly being that of a single bird at Dawson's Rock (28° 38'S, 32° 18'E) on 31 July 1981 (D. Roberts *in litt.*).

Only 5 individual black oystercatchers have been seen in Africa north of the normal non-breeding range:- 3 in Angola:- 2 as far north as Lobito (12° 35'S, 13° 25'E) in May 1973 (Summers & Cooper 1977) and one at Foz do Cunene (17° 15'S, 11° 45'E) in January 1975 (W. R. J. Dean *in litt.*) (all seen by competent observers); and one, even more northerly, old record from the west coast of Africa, in Gabon (Hartlaub 1857). Vincent (1949) actually restricted the type locality of *H. moquini* to Gabon, based on the fact that this is the first locality cited; but Hartlaub's record is based on a Verreaux specimen according to Traylor (1960), and the specimen has not been traced and may no longer exist. Bannerman (1931) was noncommittal about this record, but it has been omitted by subsequent authors. It probably refers to

a mislabelled specimen from the Cape, where the Verreaux brothers had strong connections.

There are 2 records from the east coast of Africa outside the normal non-breeding range. Haagner (1948) lists the bird from Beira (20°S, 35°E), Mocambique, without details, a record which is considered by Clancey (1971) to refer to the European Oystercatcher *H. ostralegus*. Clancey does not justify his decision and in view of the northerly record on the west coast from Lobito, it seems possible that a vagrant might have reached Mocambique. A very strange record is from the Dahlak Archipelago, in the southern part of the Red Sea, where a black oystercatcher of some form was collected, but not preserved, by Rüppell (1845).

The paucity of extralimital records, all in excess of 4000 km distance from the Canary islands, renders it very unlikely that Canary Island birds are vagrant *H. moquini*. Adult breeding *H. moquini* are essentially sedentary, though juveniles may disperse some distance from their birthplaces (pers. obs.). No age class data are available for the extralimital mainland and Dahlak Island birds, but all specimens taken on the Canary Islands have been adults (Bannerman 1913).

MEASUREMENTS AND PLUMAGE

Bannerman (1913) based his separation of *meadewaldoi* solely on aspects of plumage and measurements, *meadewaldoi* being smaller and with a distinct white patch in the wing, a feature not shared by *moquini*. At the time, few specimens and hence few mensural data were available for *moquini*. More data are now available and comparative measurements of *moquini* and *meadewaldoi* are given in Table 2. The low probabilities (%) of each measurement of each specimen of *meadewaldoi* belonging to a bird from the southern African population of *moquini* demonstrate that although the 2 populations may be related at subspecific level, where size is not necessarily a critical factor, they definitely do not belong to the same population. Culmen/tarsus ratios for 17 species and subspecies of oystercatcher are detailed in Table 3. It is clear that *moquini* is an unusual oystercatcher in that both sexes are comparatively short billed; *meadewaldoi*, on the other hand, is relatively long billed and shows less variation between sexes than other black oystercatchers – a feature common to most of the pied *ostralegus* group.

Bannerman (1963), in describing *meadewaldoi*, noted that "The white patch formed by the basal portion of the inner webs of the primaries is very pronounced, while in the Cape bird (*moquini*) there is scarcely any white at the base of the quills though the primaries become lighter towards the base". Although *moquini* exhibits a pale patch in the wing (when seen from below) at certain times of the year, there is never, contrary to the opinion of Prater *et al.* (1977), a white patch in the wing. I have occasionally observed asymmetric partial albinism in the wing of *moquini*, but this never involves more than one or two feathers. The white patch in the wing of *meadewaldoi* is most evident in fresh plumage, whereas in *moquini* a pale patch is only evident as a result of feather wear and moult (Bannerman 1963, pers. obs.).

HABITAT PREFERENCE AND BIOLOGY

In southern Africa, *H. moquini* is primarily a species of rocky shores, especially undisturbed offshore islands, contrasting strongly with the preferred sandy and muddy foraging substrates of *H. ostralegus* (Hockey &

TABLE 2

Comparison of the culmen (exposed), tarsus and wing (flattened chord) measurements of *Haematopus moquini* and the 4 existing specimens of *meadewaldoi*. "P" is the probability of each measurement of each *meadewaldoi* specimen belonging to the southern African population of *moquini*.

	length	Culmen (mm) *standard deviation units	P(%)	length	Tarsus (mm) *standard deviation units	P(%)	length	Wing (mm) *standard deviation units	P(%)
Males									
<i>moquini</i>	63.2 ± 2.81			56.1 ± 2.1			275.2 ± 5.2		
<i>meadewaldoi</i> (a)	72.5	3.3	0.1	54.0	1.0	31.7	262	2.5	1.2
(b)	77.0	4.9	<0.01	49.2	3.3	0.1	259	3.1	0.2
Females									
<i>moquini</i>	71.6 ± 2.6			57.8 ± 1.9			278.5 ± 5.1		
<i>meadewaldoi</i> (a)	79	2.9	0.4	52	3.1	0.2	250	5.6	<0.01
(b)	81	3.6	0.02	52	3.1	0.2	257	4.3	<0.01

*Standard Deviation Units = the difference between *moquini* means and individual *meadewaldoi* measurements divided by the *moquini* standard deviation of the mean.

TABLE 3

Culmen/tarsus ratios expressed as percentages for 17 species and subspecies of oystercatchers *Haematopus*.

	Males	Ratio	Females	Primary data source
Black forms				
<i>moquini</i>	112.7		123.9	This study
<i>ater</i>			136.0	Jehl 1978
<i>fuliginosus ophthalmicus</i>	128.4		145.9	McKean 1978
<i>f. fuliginosus</i>	134.7		153.0	McKean 1978
<i>unicolor</i>	139.5		153.3	Baker 1975
<i>ostralegus bachmani</i>	141.6		160.6	Ridgway 1919
<i>meadewaldoi</i>	145.0		153.8	Bannerman 1913
Pied forms (<i>ostralegus</i>)				
<i>chathamensis</i>	132.2		143.0	Baker 1975
<i>ostralegus</i>	136.7		143.3	Prater <i>et al.</i> 1977
<i>pitanay</i>	138.5		144.1	Wetmore 1965
<i>occidentalis</i>	141.1		160.6	McKean 1978
<i>leucopodus</i>			159.9	Jehl 1978
<i>frazari</i>	142.7		149.9	Ridgway 1919
<i>palliatu</i>	143.1		150.2	Ridgway 1919
<i>prattii</i>	148.3		158.7	Ridgway 1919
<i>galapagensis</i>	158.8		156.2	Ridgway 1919
<i>finschi</i>	162.1		177.9	Baker 1975

Cooper 1982). It is highly territorial and almost always occurs in pairs (Hockey in press), normally laying 2 eggs, but not often fledging more than one chick, which may remain with its parents for several months after fledging (pers. obs.). So few ornithologists have ever seen *meadewaldoi* that information concerning its biology is very scanty. No nest has ever been reported and the breeding biology is unknown. It has been recorded on both rocky and sandy shores, though rocky shores are probably favoured, since these are dominant in the areas where the bird has been recorded (Bannerman 1922, 1963). It occurs in pairs, and natives reported to von Thanner in the early 20th century that often 3 birds were present together in the summer, suggesting a family group; but it appears that the Canary Islands population underwent a decline in the second half of the 19th century, and probably earlier, and was very rare by the beginning of the 20th century (Bannerman

1963). The reason for the decline is unknown, but it is possible that introduced mammalian predators, such as cats and rats, may have been the cause. Feral cats and other terrestrial mammals are known to prey upon *H. moquini* (Hockey in press). Subsequent to Bannerman procuring a specimen in 1913, there is only one sight record, a single bird seen in Tenerife in July 1968, the only previous record of its occurrence in Tenerife being by Du Cane Godman in 1872, a record previously doubted (Bannerman 1963, 1969). An expedition to the Canary Islands in 1970 failed to locate the bird and concluded that it was probably extinct (Lovegrove 1971).

DISCUSSION

Evidence presented here strongly suggests that the black oystercatchers of the Canary Islands are not vagrants of the southern African population of *H. moquini*, and, based on plumage and proportions, that the Canary Island bird is not a subspecies of *H. moquini*.

The question remains to be considered whether *meadewaldoi* represents an isolated melanistic population of the European Oystercatcher *H. ostralegus*, its geographically closest congener, as suggested by Stresemann (1927). Although albinism has been recorded in *H. ostralegus* and in the South Island Pied Oystercatcher *H. o. finschi* of New Zealand, there is no record of melanism in Palaearctic *ostralegus* subspecies. The Variable Oystercatcher *H. unicolor* of New Zealand and Frazer's Oystercatcher of central America *H. o. frazari* exhibit a range of plumages, but the phenomenon is restricted to these 2 species (Larson 1957, Baker 1973). Baker (1977) performed cluster analysis, based on 7 operational taxonomic units, on a number of oystercatcher populations and his results indicate considerable dissimilarity between *moquini* and *meadewaldoi*. However, his sample sizes were small and this can only be considered as a supporting argument in differentiating the two populations.

Larson (1957) suggested that all oystercatchers originated from Tertiary melanistic *Haematopus* populations in the Boreal area. With the exception of the American Black Oystercatcher *H. o. bachmani* (whose status as an *ostralegus* subspecies should be questioned – Heppleston 1973) and *meadewaldoi*, all other northern hemisphere oystercatchers are pied forms (*ostralegus*). The Atlantic and Pacific gene communication between Eurasian and North American populations was cut off by the middle Pliocene, and it is possible that *meadewaldoi* is (or was) a relict population of the original dark mutant of the Tertiary, perhaps related to *H. (o.) bachmani*. It is the only melanistic oystercatcher population in the Palaearctic region, probably surviving by virtue of freedom from competition with vigorous secondary pied mutants, and, if this is the case, then *meadewaldoi* represents the stock from which *moquini*, as well as other southern black forms, arose (see Heppleston 1973). The 2 populations have therefore probably been genetically isolated since the Pliocene. Reichenbach (1852) considered *moquini* discrete enough even to warrant generic status and created the genus *Melanibyx*. However, no subsequent authors have subscribed to this belief.

CONCLUSION

On the evidence presented here, I propose that *H. meadewaldoi* be accorded specific status and be referred to as *Haematopus meadewaldoi*, Meade-Waldo's Black Oystercatcher. As a corollary, *Haematopus moquini* must be treated binomially.

Acknowledgements: I am grateful to my colleague Mr. R. K. Brooke for help with nomenclatural and taxonomic matters.

References:

- Baker, A. J. 1973. Genetics of plumage variability in the Variable Oystercatcher. *Notornis* 20: 330-345.
- 1975. Morphological variation, hybridisation and systematics of New Zealand oystercatchers (Charadriiformes: Haematopodidae). *J. Zool. Lond.* 175: 357-390.
- 1977. Multivariate assessment of the phenetic affinities of Australasian oystercatchers. *Bijdr. Dier.* 47: 156-164.
- Bannerman, D. A. 1913. Exhibition and description of a new subspecies of oystercatcher (*Haematopus niger meadewaldoi*) from the Canary Islands. *Bull. Brit. Orn. Cl.* 31: 33-34.
- 1922. *The Canary Islands: their History, Natural History and Scenery*. London: Gurney & Jackson.
- 1931. *The Birds of Tropical West Africa*. Vol 2. London: Crown Agents for the Colonies.
- 1963. *Birds of the Atlantic Islands*. Vol 1. *A History of the Birds of the Canary Islands and of the Salvages*. Edinburgh: Oliver & Boyd.
- 1969. A probable sight record of a Canarian Black Oystercatcher. *Ibis* 111: 257.
- Bonaparte, C. L. 1856. Additions et corrections aux Tableaux paralléliques de la deuxième sous-classe des Oiseaux, Praecoces ou Autophages. *Comp. Rend. Séances. Acad. Sci., Paris* 43: 1017-1026.
- Clancey, P. A. 1971. *A Handlist of the Birds of Southern Mocambique*. Lourenco Marques: Institute de Investigacao Cientifica de Mocambique.
- Cooper, J., Robertson, H. G. & Shaughnessy, P. D. 1980. Waders (Charadrii) and other coastal birds of the Diamond Coast and the islands off South West Africa. *Madoqua* 12: 51-57.
- Etchécopar, R. D. & Huë, F. 1964. *Les Oiseaux du Nord de l'Afrique*. Paris: N. Boubée et Cie.
- Jehl, J. R. 1978. A new hybrid oystercatcher from South America. *H. leucopodus* x *H. ater*. *Condor* 80: 344-346.
- Haagner, A. K. 1948. A list of birds observed in Beira and neighbourhood with some notes on habits, etc. Part II. *Ostrich* 19: 211-217.
- Hartlaub, G. 1857. *System der Ornithologie Westafrika's*. Bremen, Germany.
- Heppleston, P. B. 1973. The distribution and taxonomy of oystercatchers. *Notornis* 20: 102-112.
- Hockey, P. A. R. in press. Behaviour patterns of non-breeding African Black Oystercatchers *Haematopus moquini* at offshore islands. *Proc. 5 Pan-Afr. Orn. Congr.* Malawi 1980.
- in press. Feeding techniques of the African Black Oystercatcher *Haematopus moquini*. In Cooper, J. (Ed.). *Proceedings of the Symposium on Birds of the Sea and Shore*. 1979. Cape Town: African Seabird Group.
- Hockey, P. A. R. & Cooper, J. 1982. Occurrence of the European Oystercatcher *Haematopus ostralegus* in southern Africa. *Ardea*. 70: 55-58.
- King, W. B. 1979. *Red Data Book*. Vol. 2: *Aves*. 2nd edition. Part 2. Morges: International Union for Conservation of Nature and Natural Resources.
- Larson, S. 1957. The suborder Charadrii in Arctic and Boreal areas during the Tertiary and Pleistocene. *Acta Vertebratica* 1: 1-84.
- Lovegrove, R. 1971. B.O.U. supported expedition to the north-east Canary Islands. *Ibis* 113: 269-272.
- Meade-Waldo, E. G. 1889-93. Notes on some birds of the Canary Islands. *Ibis* Ser. 6 (1): 1-13, 503-20; (2) 429-438; (5) 185-207.
- McKean, J. L. 1978. Some remarks on the taxonomy of Australasian oystercatchers, *Haematopus* spp. *Sunbird* 9: 3-6.
- Peters, J. L. 1934. *Checklist of Birds of the World*. Vol 2. Harvard: University Press.
- Prater, A. J., Marchant, J. H. & Vuorinen, J. 1977. *Guide to the Identification and Ageing of Holarctic Waders*. British Trust for Ornithology.
- Ridgway, R. 1919. The birds of North and Middle America. *Bull. U.S. Natn. Mus.* 50 (8): 26-42.
- Reichenbach, H. G. L. 1852. *Avium Systema Naturale*. Leipzig: F. Hofmeister.
- Rüppell, E. 1845. *Systematische Übersicht der Vögel Nord-Ost-Afrika's*. Frankfurt A.M.: Schmerber'schen.
- Stresemann, E. 1927. Die Schwarzen Austernfischer (*Haematopus*). *Orn. Monatsb.* 35: 71-77.
- Summers, R. W. & Cooper, J. 1977. The population, ecology and conservation of the Black Oystercatcher *Haematopus moquini*. *Ostrich* 48: 28-40.

- Traylor, M. A. 1960. Notes on the birds of Angola, non-passeres. *Publ. Cult. Co. Diam. Ang: Lisboa*. No. 51.
- Vaurie, C. 1965. *The Birds of the Palearctic Fauna, Non-Passeriformes*. London: H. F. & G. Witherby Ltd.
- Vincent, J. 1949. Systematic notes. Part IV. *Ostrich* 20: 145-152.
- Wetmore, A. 1965. *The Birds of the Republic of Panama*. Part I. Washington: Smithsonian Institution.
- Address: P. A. R. Hockey, FitzPatrick Institute, University of Cape Town, Rondebosch 7700, South Africa.
- © British Ornithologists' Club 1982.

Notes on the nesting of the Red-billed Curassow *Crax blumenbachii*

by D. M. Teixeira and D. W. Snow

Received 30 September 1981

On 15 November 1979 we had the rare opportunity to observe the Red-billed Curassow *Crax blumenbachii* at its nest in one of the last refuges of this rarest and least known curassow, the Sooretama Biological Reserve (Linhares, Espírito Santo, 19° 10'-19° 17'S, 40° 0'-40° 15'W). *C. blumenbachii* is a remarkable endemic of southeastern Brazil, previously found in southern Bahia, eastern Minas Gerais, Espírito Santo and northern Rio de Janeiro. No more than 12 skins are known (Vaurie 1968) and, except for the studies of Sick (1964, 1970), almost nothing is known of its habits.

The nest was sited 6 m up in an obliquely leaning tree, one of a group growing from the water at the edge of a lagoon. In shape and composition the nest resembled those of other species of *Crax* (Delacour & Amadon 1973), being a rather simple rounded platform constructed of thin sticks (2 mm in diameter and of irregular length), about 50 cm in diameter and solidly based on an arboreal termite nest. There were dry leaves and old feathers between the maze of sticks, especially near the centre of the nest. Although the platform was rather thick, the upper parts of the eggs were visible from the ground from one side. The whole nest, however, was shaded and well concealed by the surrounding foliage.

There were 2 eggs, white with rough shells stained by contact with the vegetable matter of the nest. They measured 92 x 61 mm and 91 x 64 mm and weighed 196 and 193 g respectively. Only the female was seen to incubate, the male usually keeping its distance. The female when incubating was extremely shy, flying silently away at our distant approach unless great care was taken and she once took 5 hours to return. When returning she surveyed the surroundings warily as she came closer, sometimes walking on the ground and sometimes climbing among the branches. When on the nest she became very inconspicuous, with the tail held horizontally and the neck retracted.

The only other information on the breeding of this species that we were able to obtain at Sooretama was that some birds had well-grown young (around 100 days old) at the time we found the nest with eggs. Additional information on the breeding of *C. blumenbachii* has been obtained from birds nesting in captivity (Teixeira & Antas 1982, Teixeira & Sick 1981).

The diet includes insects, seeds and many fruits, most of the latter picked from the ground, but sometimes also from trees. At Sooretama, fruits of *Eugenia* (Myrtaceae), *Ferdinandusa* (Rubiaceae) and *Eschweilera* (Lecythidaceae) are eaten, but *C. blumenbachii* is also fond of some kinds of tender leaves and a characteristic sign of their foraging is the presence of bushes with their leaves half eaten.

C. blumenbachii is one of the 3 most endangered Brazilian species of Cracidae (Sick 1972, Sick & Teixeira 1979), its known range now being restricted to the still forested parts of southern Bahia and two localities in Espírito Santo (the Sooretama Reserve and the "Fazenda Klabin", município de Conceição da Barra). Although officially protected since 1967, the species is still decreasing as a result of illegal hunting and the continued deforestation of its already much reduced range in southern Bahia. If this situation does not change, it will probably be confined to two or three islands of forests in the near future.

Acknowledgements: We would like to thank Dr. Helmut Sick, Mr. J. Machado, Mr. Padium and Mr. Nardelli for the help given. We thank also Prof. J. Nacinovic, Prof. G. Nunan and Dr. M. T. Padua for their collaboration. Many thanks, also, to the Brazilian "Conselho Nacional de Desenvolvimento Científico e Tecnológico—CNPq", which partially supported the research.

References:

- Delacour, J. & Amadon, D. 1973. *Curassows and Related Birds*. Am. Mus. Nat. Hist., Chanticleer Press: New York.
- Sick, H. 1964. "Curassows" in *The New Dictionary of Birds*: 174–176. (Thomson, A. L. ed.) Nelson and Sons: London.
- 1970. Notes on Brazilian Cracidae. *Condor* 72 (1): 106–108.
- 1972. A ameaça da avifauna brasileira. In *Espécies da fauna brasileira ameaçadas de extinção*. Acad. Bras. Cienc.: 99–153.
- Sick, H. & Teixeira, D. M. 1979. Notas sobre aves brasileiras raras ou ameaçadas de extinção. *Publ. Avuls. Mus. Nac.* No. 62.
- Teixeira, D. M. & Antas, P. T. Z. 1982. Notes on endangered Brazilian Cracidae. *Proc. I Simposio internacional sobre la familia Cracidae*, Mexico, 1981.
- Teixeira, D. M. & Sick, H. 1981. Notes on Brazilian Cracidae: the Red-billed Curassow, *Crax blumenbachii* Spix, 1825, and the Wattled Curassow, *Crax globulosa* Spix, 1825. *Bol. Mus. Nac.* (n. ser.) Zoologia, 299: 31 pp.
- Vaurie, C. 1968. Taxonomy of the Cracidae. *Bull. Am. Mus. Nat. Hist.* 138: 133–259.
- Addresses:* Professor Dante M. Teixeira, Museu Nacional, Rio de Janeiro, Brasil. Dr. D. W. Snow, British Museum (Natural History), Tring, Herts, England.
- © British Ornithologists' Club 1982.

IN BRIEF

Nomenclatural notes on the phalaropes

It is widely understood that, in the *Systema Naturae*, Linnaeus signified those specific names that he intended as nouns in apposition to the generic name by the use of a capital initial letter. Such names do not change their ending, no matter what the gender may be of the name of any genus to which they may be transferred. In a few instances, this Linnaean convention has been overlooked, and the gender of a specific name incorrectly altered. I pointed this out (Parkes 1958, *Auk* 75: 479) in the case of *Lanius Garrulus* Linnaeus, which was incorrectly changed to "garrula" by many authors after the waxwing was transferred to the feminine genus *Bombycilla*.

Oberholser (1974, *The Bird Life of Texas*: 981) called attention to a similar

case in the genus *Phalaropus*, but his completely valid correction has been generally overlooked, probably because of the many dubious or invalid nomenclatural innovations proposed in this posthumous book. Linnaeus (1758, *Syst. Nat.* 1: 148) described *Tringa Fulicaria*; when this species was placed in the genus *Phalaropus*, virtually all authors changed the spelling of the specific name to *fulicarius*. In using a capital initial letter, Linnaeus showed his intent that *Fulicaria* should be considered a noun, and the ending should thus not be altered when this name is transferred to a masculine genus. Oberholser correctly gave the name of this bird as *Phalaropus fulicaria*. On the other hand, the specific name of *Tringa lobata* Linnaeus, having been spelled with a lower case initial, is an adjective, and is properly changed to *lobatus* when placed in the genus *Phalaropus*.

A word on the English names of phalaropes is in order. The American Ornithologists' Union Committee on Classification and Nomenclature, now engaged in preparing the sixth edition of its check-list for 1983 publication, has voted to conform to traditional British usage in calling *Phalaropus lobatus* "Red-necked" rather than "Northern" Phalarope. This is a step toward international standardization of English names of birds, and the British name was considered to be appropriately descriptive. The American committee, however, retains Red Phalarope for *P. fulicaria* rather than Grey Phalarope of British usage. In this instance the American name was considered to be the appropriate one, as it describes the unique breeding season dress of this species, whereas *all* phalaropes are grey in winter.

20 January 1982

© British Ornithologists' Club 1982.

Kenneth C. Parkes,

Carnegie Museum of Natural History,
Pittsburgh, Pennsylvania 15213, U.S.A.

A long overlooked homonymy in the family Tinamidae

Hellmayr & Conover (1942) used the name *Nothura maculosa major* (Spix) for the subspecies of the Spotted Tinamou found in interior Brazil. This name is based on *Tinamus major* Spix (1825: 64, pl. 80). and was adopted in 2 recent reference works by Blake (1977, 1979). Unfortunately, *Tinamus major* Spix, 1825, is preoccupied by *Tetrao major* Gmelin, 1789, the basis for the accepted name *Tinamus major* of the Great Tinamou. This is not an instance of secondary homonymy. The generic name *Tinamus* was introduced by Hermann in 1789, and had been widely adopted long before 1825, the date of Spix's publication. There was thus already a *Tinamus major* (Gmelin) when Spix introduced his own *Tinamus major*, making Spix's name a junior homonym and unavailable.

There is, however, another Spix name available for the same subspecies of Spotted Tinamou. Hellmayr (1906) identified the holotype of *Tinamus medius* Spix (1825: 65, pl. 81) in the Munich Museum as an immature specimen of *Nothura maculosa*. Both holotypes, those of *Tinamus major* and *T. medius* Spix, came from "Tejuco" (=Diamantina, Minas Gerais, Brazil), and are thus referable to the same population. The Spotted Tinamou of interior Brazil thus becomes *Nothura maculosa media* (Spix).

Emmet R. Blake of the Field Museum of Natural History was kind enough to verify the findings outlined above.

References:

- Blake, E. R. 1977. *Manual of Neotropical Birds*. Vol. 1. Univ. Chicago Press: Chicago and London.
- 1979. Family Tinamidae. In *Check-list of Birds of the World*. Vol. 1, 2nd ed. (E. Mayr & G. W. Cottrell, Eds.). Mus. Comp. Zoology, Harvard Univ.: Cambridge, Massachusetts.
- Hellmayr, C. E. 1906. Revision der Spix'schen Typen brasilianischer Vögel. *Abhandl. K. Bayer. Akad. Wiss.* 22: 563–726.
- & Conover, B. 1942. Catalogue of birds of the Americas . . . [etc.], part 1, no. 1. *Zool. Ser. Field Mus. Nat. Hist.* 13, part 1, no. 1: 1–636.
- Spix, J. B. von. 1825. *Avium Species Novae* . . . [etc.], vol. 2. Hübschmann: Munich.
- 16 February 1982 Kenneth C. Parkes,
© British Ornithologists' Club 1982. Carnegie Museum of Natural History,
Pittsburgh, Pennsylvania 15213, U.S.A.

First record of the Chilean Woodstar *Eulidia yarrellii* in Peru

On 26 December 1977 Susan Allen-Stotz and I observed a sub-adult male and 2 female-plumaged Chilean Woodstars *Eulidia yarrellii* feeding at *Lantana* and *Hibiscus* flowers in the garden of the Hotel de Turistas, in Tacna, extreme southern Peru. Present for direct comparison were several male and female Peruvian Sheartails *Thaumastora cora* and a female Oasis Hummingbird *Rhodopis vesper*. The black tail of the male *Eulidia* was distinctive in colour and shape (see below); females were buff-coloured below (as opposed to the whiter *Thaumastora*), and had a cinnamon-buff band across the base of the tail. When not foraging, the woodstars perched inconspicuously within the cover of shrubs and short trees. On the following day, an adult male was observed intermittently for nearly 2 hours (12.00–14.00) as it visited *Lantana* flowers at the Tacna Airport, about 10 km south of the city. The bird was frequently driven away by the larger Oasis Hummingbirds, and also by 2 adult male Peruvian Sheartails also present. The flight of the woodstar was direct, slow, and bee-like; its wings produced a constant, distinctive buzzing sound not made by the 2 other hummingbird species in the area. The calls of *Eulidia*, slightly raspy *tsick* notes, were less musical than the louder chipping of the sheartails. Occasionally the woodstar would hover and fan its black tail, clearly showing lengthened outer rectrices that curved inward toward the very short central ones.

The Chilean Woodstar was previously known from only 4 areas in extreme northern Chile, from Arica (Tarapacá Province) south to Cobija (Antofagasta Province). Most records of this increasingly rare species (see King 1981) are from the vicinity of Arica, only 40 km south of Tacna; thus its occurrence in the latter area is not surprising. The species may be a regular wanderer to Tacna and possibly further north, and it should be looked for in the infrequently visited foothill valleys of southern Peru in the Departments of Moquegua and Tacna.

References:

- King, W. B. 1981. *Endangered Birds of the World*. The ICBP Bird Red Data Book. Smithsonian Institution Press: Washington, D.C.
- 24 March 1982 Theodore A. Parker, III
Museum of Zoology, Louisiana State University, Baton Rouge, LA 70893, U.S.A.
© British Ornithologists' Club 1982.

NOTICE TO CONTRIBUTORS

Papers, whether by Club Members or by non-members, should be sent to the Editor, Dr. J. F. Monk, The Glebe Cottage, Goring, Reading RG8 9AP, and are accepted on the understanding that they are offered solely for publication in the *Bulletin*. They should be typed on one side of the paper, with double-spacing and a wide margin, and submitted with a *duplicate copy on airmail paper*.

Scientific nomenclature and the style and lay-out of papers and of References should conform with usage in this or recent issues of the *Bulletin*, unless a departure is explained and justified. Photographic illustrations, although welcome, can only be accepted if the contributor is willing to pay for their reproduction.

An author wishing to introduce a new name or describe a new form should append *nom.*, *gen.*, *sp.* or *subsp. nov.*, as appropriate, and set out the supporting evidence under the headings "Description", "Distribution", "Type", "Measurements of Type" and "Material examined", plus any others needed.

A contributor is entitled to 10 free reprints of the pages of the *Bulletin* in which his contribution, if one page or more in length, appears. Additional reprints or reprints of contributions of less than one page may be ordered when the manuscript is submitted and will be charged for. Authors may be charged for proof corrections for which they are responsible.

BACK NUMBERS OF THE BULLETIN

Available on application to Dr D. W. Snow, British Museum (Natural History), Tring, Herts HP23 6AP as follows: 1981-2 (Vols. 101 & 102) £3 each issue, 1980 (Vol. 100) No. 1 £4, No. 2, 3 & 4 £2 each, 1973-9 (Vols. 93-99) £2 each issue (4 issues per year for Vol. 93 and after), 1969-72 (Vols. 89-92) £1.50 each issue (6 per year), 1929-68 (Vols. 50-88) £1 each issue (generally 9 per year), earlier than Vol. 50 £2 each issue (generally 9 per year); Indices Vol. 70 and after £1 each, Vols. 50-69 £2 each, Vol. 49 and before £4 each. Long runs (at least 10 years) for Vol. 50 and after are available at reduced rates on enquiry. Orders over £50 post free.

MEMBERSHIP

Only Members of the British Ornithologists' Union are eligible to join the Club: applications should be sent to the Hon. Treasurer, Mrs. D. Bradley, 53 Osterley Road, Isleworth, Middlesex, together with the current year's subscription. The remittance and all other payments to the Club should always be in *sterling* unless an addition of £1.00 is made to cover bank charges for exchange, etc. Payment of subscription entitles a Member to receive all *Bulletins* for the year. Changes of address and revised bankers' orders or covenants (and any other correspondence concerning Membership) should be sent to the Hon. Treasurer as promptly as possible.

SUBSCRIPTION TO BULLETIN

The *Bulletin* may be purchased by non-members on payment of an annual subscription of £13.00 (postage and index free). Send all orders and remittances in sterling, unless an addition of £1.00 is made to cover bank charges, to the Hon. Treasurer. Single issues may be obtained as back numbers (see above).

CORRESPONDENCE

Correspondence about Club meetings and other matters not mentioned above should go to the Hon. Secretary, R. E. F. Peal, 2 Chestnut Lane, Sevenoaks, Kent TN13 3AR.

Bulletin of the
British Ornithologists' Club



Edited by
Dr. J. F. MONK

FORTHCOMING MEETINGS

The Meeting arranged for 20 July had unfortunately to be postponed owing to an impending railway strike. Mr Gullick has very kindly agreed to come on Tuesday, 14 December and Members will be able to hear him on that date (see below for details).

Saturday, 16 October, 1982. A visit at 10.30 a.m. to the **Harrison Zoological Museum**, Bowerwood House, St Botolph's Road, Sevenoaks (close to the station) with its notable collection of mounted birds and of skins, founded by the late Dr James Harrison. After a buffet lunch, the **Sevenoaks Experimental Wildfowl Reserve**, created by the late Dr Jeffery Harrison, will be visited. Those wishing to attend should send their acceptance on the enclosed slip with a cheque for £3.30 per person to reach the Hon. Secretary at 2 Chestnut Lane, Sevenoaks, Kent TN13 3AR (telephone Sevenoaks (0732) 450313) not later than first post on Wednesday, 13 October.

Tuesday, 23 November 1982 in the Senior Common Room, South Side' Imperial College, Prince's Gardens, S.W.7 at 6.30 p.m. for 7 p.m., **Dr A. W. Diamond**, who has spent 2 years in Seychelles, 16 months on Aldabra and has visited the Mascarenes and Comores, will speak on *Birds of the Western Indian Ocean islands*. Those wishing to attend should send their acceptance with a cheque for £6.15 to the Hon. Secretary (address above) to arrive not later than first post on Thursday, 18 November.

Tuesday, 14 December 1982, at the same venue and time, **Mr T. M. Gullick**, who has lived in Spain for a number of years, will speak on *Birds in central Spain*. Those wishing to attend should send their acceptance with a cheque for £6.15 per person to the Hon. Secretary (address above) to arrive not later than first post on Thursday, 9 December.

Tuesday, 18 January 1983, at the same venue and time, **Mr Robin Woods**, who worked in the Falkland Islands for 6 years, will speak on *Some Birds of the Falkland Islands*. Those wishing to attend should send their acceptance with a cheque for £6.15 to the Hon. Secretary (address above) to arrive not later than first post on Thursday, 13 January.

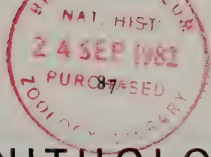
Tuesday, 8 March 1983 at the same venue and time, **Dr James Cadbury** will speak on *The Restoration of Habitats for Birds*.

Volume 48 of the *Bulletin*, out of print for many years, has now been reproduced and copies are available: single numbers £2 each, index £4 with a special price of £20 for the whole volume.

COMMITTEE

D. R. Calder (*Chairman*)
R. E. F. Peal (*Hon. Secretary*)
Dr. J. F. Monk (*Editor*)
R. A. N. Croucher
P. J. Conder, O.B.E.

B. Gray (*Vice-Chairman*)
Mrs. D. M. Bradley (*Hon. Treasurer*)
J. G. Parker
Revd. G. K. McCulloch, O.B.E.



[Bull. Brit. Orn. Cl. 1982: 102(3)]

Bulletin of the BRITISH ORNITHOLOGISTS' CLUB

Vol. 102 No. 3

Published: 20 September 1982

The seven hundred and fortieth Meeting of the Club was held at the Senior Common Room, South Side, Imperial College, London, S.W.7 on Tuesday 22 June 1982 at 7 p.m. The attendance was 15 Members and 7 guests.

Members present were: D. R. CALDER (*Chairman*), K. F. BETTON, Dr G. BEVEN, Mrs D. M. BRADLEY, P. A. BROWN, J. H. R. BOSWALL, R. A. N. CROUCHER, J. H. ELGOOD, B. GRAY, D. GRIFFIN, Dr A. G. KNOX, Dr J. F. MONK, R. E. F. PEAL, Dr T. J. SELLER and R. J. WATLING.

Guests present were: Mrs G. BEVEN, Mrs F. A. CLIFTON, R. I. CHANDLER, J. CROCKER, P. ESPIN, Mrs R. E. F. PEAL and J. E. TRICKS.

Dr T. J. Sellar, whose talk had been postponed when the January meeting had unavoidably to be cancelled, spoke most interestingly on "Are Bullfinches and fruit crops really incompatible?", using research data assembled at West Malling Research Centre to throw possible doubt on the degree of harm caused by Bullfinches in orchards.

Land-birds of a guano island off the coast of Peru

by *David Cameron Duffy*

Received 14 October 1981

Although the resident sea-birds of the guano islands of Peru have received considerable attention (e.g. Murphy 1925, 1936, Vogt 1942) there exists little information on the occurrence of landbirds. Galarza (1968) listed 5 species seen during visits to Isla Chinha Norte ($13^{\circ}37'S$, $76^{\circ}24'W$): Turkey Vulture *Cathartes aura*, Peregrine Falcon *Falco peregrinus*, Seaside Cinclodes *Cinclodes nigrofumosus*, House Sparrow *Passer domesticus*, and Hooded Siskin *Carduelis* (= *Spinus*) *magellanicus*. Andean Condor *Vultur gryphus*, Black Vulture *Coragyps atratus*, Turkey Vulture, Peregrine Falcon, and Seaside Cinclodes have been reported by other authors (Murphy 1925, Hellmayr & Conover 1949: 229, Tovar 1968).

I recorded 12 species of land-birds on Isla Mazorca ($11^{\circ}22'S$, $77^{\circ}45'W$), Departamento de Lima, Peru, between 21 Sep 1977 and 30 Mar 1978, except for the periods 4-6 Oct, 1-4 Nov, 13-19 Nov, 1-5 Dec, 29 Dec-2 Jan, 1-6 Feb and 3-7 Mar.

Mazorca, approximately 1×0.5 km, with an area of 11 ha, is 15 km from the Peruvian coast. This distance is broken by several small islands of the Huara group. Mazorca has an elevation of 84 m, with steep slopes or sheer cliffs. Except for moss on the highest point, there is no natural vegetation on Mazorca, nor on the other islands of the Huara group. The islands' guards have planted about 20 flowering plants and vegetables, but these are probably not a significant source of food for birds. There is almost no rainfall (Murphy 1925), but heavy morning dews are common. The only permanent water is run-off from a cistern and a large basin put out for the cats, dogs and pigeons kept by the guards.

The dominant ecological feature of the island is a mixed colony of 300,000 Peruvian Boobies *Sula variegata* and 300,000 Guanay Cormorants *Phalacrocorax*

bougainvillii. Smaller numbers of 5 other seabirds also nest. Phenomenal populations of avian ectoparasites, a possible food source, are also present.

All the following sight records are of single individuals unless otherwise noted.

Peregrine Falcon *Falco peregrinus*. 25-27 Oct, 6-7 Nov, 7-12 Nov.

Bare-faced Ground Dove *Metriopelia ceceliae*. 17-18 Oct.

Band-winged Nightjar *Caprimulgus longirostris*. 27 Oct, 3 Jan.

Greyish Miner *Geositta maritima*. 21 Sep, 16 Oct, 20 Oct, 12 Nov.

Vermilion Flycatcher *Pyrocephalus rubinus*. 27 Dec, 24 Feb (found freshly dead).

Eastern Kingbird *Tyrannus tyrannus*. 17 Oct, 25 Oct.

Southern Martin *Progne modestus*. 22-25 Sep, 11 Oct, 2 on 25 Oct.

Barn Swallow *Hirundo rustica*. 22-25 Sep, 16-17 Oct, 3 during 22-23 Oct, 4 on 24 Oct, 2 on 26 Oct (one found dead).

Cave Swallow *Petrochelidon fulva*. 17 Oct.

House Sparrow *Passer domesticus*. Numbers fluctuated from 2 to 10 until December, after which only 2 were present. There was no evidence of breeding but I was unable to examine several possible locations. Birds were seen to sally after insects and to probe in holes in concrete and wood like the Paridae. M. Plenge (pers. comm.) has observed the latter behaviour by House Sparrows in Lima.

Bobolink *Dolichonyx oryzivorus*. 40 on 22 Oct, 24 Oct (found dead after striking lighthouse).

Rufous-collared Sparrow *Zonotrichia capensis*. 16 Oct, 11 Nov.

The species list is not surprising except that Turkey Vulture and Seaside Cinclodes, apparently the most frequent land-birds on other guano islands, were absent. Mazarca is relatively far from the coast, which may explain the absence of the vulture, while the paucity of sheltered inter-tidal habitat could explain the absence of the cinclodes.

Four of the 12 species recorded are northern migrants and the rest are common or fairly common residents of the adjacent coast. Despite a mainland avifauna adapted to the arid terrain of coastal Peru, only the exotic House Sparrow seems able to tolerate the extreme aridity and lack of vegetation of this guano island.

Acknowledgements: I would like to thank Peruvian authorities for allowing me to work on Mazarca. M. Plenge, B. Torres, and P. Yengle provided help and encouragement. This report is part of a larger project sponsored by a Fellowship from the Organization of American States, Princeton University, and a grant for dissertation-research by the National Science Foundation (DEB77-16077).

References:

- Galarza, N. 1968. Informe sobre estudios ornitologicos realizados en el laboratorio de La Puntilla (Pisco) en Setiembre de 1965/66. *Informe Esp.* 31: 1-26. Instituto del Mar del Peru. Callao.
- Hellmayr, C. E. & Conover, B. 1949. Catalogue of birds of the Americas. Pt 1 (4). *Zool. Ser. Field Mus.* 8: 1-358.
- Murphy, R. C. 1925. *Bird Islands of Peru*. Putnam: New York.
- 1936. *Oceanic Birds of South America*. Am. Mus. Nat. Hist: New York.
- Tovar, H. 1968. Areas de reproducción y distribución de las aves marinas en el litoral peruano. *Bol. Inst. Mar. Peru* 1 (10): 526-546.
- Vogt, W. 1942. Informe sobre las aves guaneras. *Bol. Comp. Admora Guano* 18 (3): 3-132.
- Address:* Dr. D. C. Duffy, Percy FitzPatrick Institute of African Ornithology, The University of Cape Town, Rondebosch 7700, South Africa.

The Somali Short-billed Crombec *Sylvietta philippae* in Somalia and Ethiopia

by J. S. Ash

Received 16 October 1981

The Somali Short-billed Crombec *Sylvietta philippae* is a little known bird, which previously has only twice been reported in the field as a distinct species; first by Sir Geoffrey Archer, who thought it was a new *Eremomela* when he first collected it in 1918. Though, at that time, "It was described by someone in the British Museum as a new species" (Archer & Godman 1961: 1259-61), "the description was *never published*" (Archer's italics). Much later, Williams (1955) found it again independently and described it as a new *Sylvietta*. Other specimens have since been found in collections and have been reported upon (Erard 1974, Roche 1966, 1975, 1977). The species is now known to be fairly widespread in Somalia (pers. obs.), and it occurs in the adjoining area of Ethiopia (Erard 1974 and pers. obs.); but it lives in country seldom visited by ornithologists, so that it will be a long time before its range is finally determined.

Hall & Moreau (1970) regarded the 3 short-billed *Sylvietta* (*whytii*, *brachyura* and *philippae*) as a superspecies, distinct from both the long-billed species, *rufescens* and *isabellina*, which form another superspecies. A further 4 forest and woodland species, *ruficapilla*, *leucophrys*, *virens* and *denti* form a second species-group. Irwin (1968), however, regards *ruficapilla* and *whytii* as forming a superspecies.

Identification

Adequate descriptions of *S. philippae* have been given by Williams (1955), Archer & Godman (1961) and Mackworth-Praed & Grant (1960). My own impression is that the difficulties of identification have been overemphasised (but I had the advantage of knowing what to expect), and this impression needs affirming, for the species presents no particular problems of recognition in the field. It is clearly an *Eremomela* or *Sylvietta*, and no species in these genera other than *S. philippae* shows the combination of yellow on the underparts, reddish-brown legs, dark face mask and white supercilium. At first glance the species is reminiscent of a diminutive Lesser Whitethroat *Sylvia curruca* from its face mask; *S. curruca*, however, is unknown within the range of *S. philippae*.

Distribution

All records of *S. philippae* that I have been able to trace are detailed in Table 1, and their distribution is shown in Figure 1. It occurs in northern and western Somalia (not in the northeast, *pace* Hall & Moreau 1970), and just extends into the Ogaden (Ethiopia). It may be expected more widely in the Ogaden when further exploration becomes possible (travel in this area has always been hazardous, and is now virtually impossible).

S. brachyura has a much wider distribution, extending right across northern Somalia, south through the central Ogaden and across southern Somalia. However, except in the small area of the upper Juba, in Somalia, nowhere else so far as is known do the 2 species overlap. On the other hand, *S. isabellina* extends in a broad belt through the west of northern Somalia

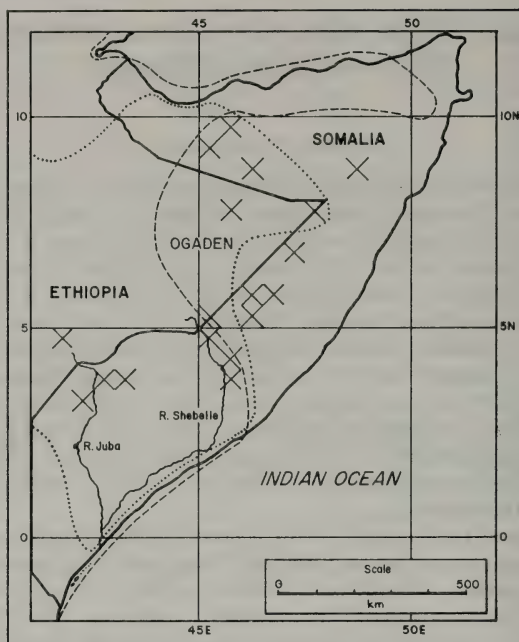


Fig. 1. Distribution of *Sylvietta philippae* in Somalia and Ethiopia in relation to that of *S. brachyura* and *S. isabellina*. The distribution of *S. brachyura* lies to the west of the broken line, of *S. isabellina* to the west of the dotted line, and *S. philippae* records are shown by half-degree squares marked with a X. Map based on Somalia Distribution Scheme (vide Ash & Pomeroy 1981).

TABLE 1

No.	Locality	Coordinates	Dates	Wing (mm)	Wt. (g)	Authority
1.	Burao	09°32'N, 45°33'E	1♂	—	—	Archer & Godman 1961
2.	Eil Huma	09°23'N, 45°10'E	1♂	—	—	Archer & Godman 1961
3.	Daba Dalol	08°57'N, 46°21'E	1♀	—	—	Archer & Godman 1961
4.	Garrero	08°54'N, 46°10'E	1	—	—	Archer & Godman 1961
5.	Nr. Galkayu	06°50'N, 47°25'E	1♂	8.iii.54	} 52.55.5 (2♂♂) 51-53 (4♀♀)	Williams 1955
6.	Nr. Dusa Mareb	05°32'N, 46°23'E	—	—		Williams 1955
7.	Nr. Belet Uen	04°50'N, 45°20'E	—	—		Williams 1955
8.	Iesomme	04°03'N, 45°39'E	1♂	2.ix.62	54.5	Roche 1975*
9.	Run	08°48'N, 48°52'E	1♀	6.viii.64	—	Roche 1975
10.	Run	08°48'N, 48°52'E	1♂, 10	12.viii.69	—	Roche 1977
11.	Bogol Mayo (11km ESE)	04°30'N, 41°35'E	1♂	24.xi.71	55.5	10 Erard 1974
			1♀	24.xi.71	52.5	9 Erard 1974
12.	Gheraro	07°50'N, 45°54'E	1	12.vii.76	—	Ash
13.	Gheraro (10km SW)	07°47'N, 45°51'E	2	12.vii.76	—	Ash
14.	Mataban	05°10'N, 45°27'E	Pr.	29.iv.79	—	Ash & Miskell
15.	El Dere (15km W)	05°20'N, 46°03'E	2	29.iv.79	—	Ash & Miskell
16.	Dusa Mareb (6km SW)	05°28'N, 46°21'E	3	29.iv.79	—	Ash & Miskell
17.	Lake Sinadogo (5km N)	05°24'N, 46°22'E	1	29.iv.79	—	Ash & Miskell
18.	Maregur (5km NE)	05°47'N, 46°33'E	1♂	30.iv.79	53	7.4 Ash & Miskell
			1♀	30.iv.79	50	7.9 Ash & Miskell
19.	Galkayu (10km NE)	06°51'N, 47°25'E	1♂s	1.v.79	—	Ash & Miskell
20.	Bur Dinle (17km NE)	07°44'N, 47°56'E	1	1.v.79	—	Ash & Miskell
21.	Bulo Burti (9km N)	03°57'N, 45°36'E	Pr.B	25.v.79	—	Ash & Miskell
22.	Garba Harray (38km S)	03°01'N, 42°17'E	2	5.x.79	—	Ash & Miskell
23.	Lugh (43km SW)	03°31'N, 42°19'E	2	7.x.79	—	Ash & Miskell
24.	Wajit (19km W)	03°50'N, 43°04'E	4	7.x.79	—	Ash & Miskell
25.	Wajit (26km S)	03°30'N, 43°14'E	1	7.x.79	—	Ash & Miskell
26.	Garoe (101km S)	08°24'N, 48°29'E	1♂s	15.v.80	—	Ash & Miskell
27.	El Dere (3km NE)	05°22'N, 46°12'E	1	16.v.80	—	Ash & Miskell

Notes: *recorded as *Eremomela interpres* in Roche (1966); Pr. = pair; B = breeding; s = singing; numbers 12-17 and 19-27 are sight records; numbers 11-13 are in Ethiopia, the others in Somalia; o = unsexed.

southwards through the Ogaden and southern Somalia west of 48°E, and is widely sympatric with both *brachyura* and *philippae*, and in the upper Juba all 3 species occur together. Further information may reveal less allopatry between *philippae* and *brachyura*; Hall & Moreau (1970), for example, with much fewer data for the 3 species, show *philippae* distribution to be isolated from both the other species.

Breeding

The nest and eggs of *S. philippae* are still unknown. It is not apparent whether the comment in Archer & Godman (1961) that "eggs would be laid in May" is based on gonadal development, or is a surmise based on experience with other species; but it nevertheless proves accurate. The pair (No. 18 in Table. 1) examined on 30 April showed fully developed gonads in the male (7mm) and partial development in the female (largest ovum 1mm), indicating that eggs would be laid before mid-May. A pair (No. 21) on 25 May were feeding a newly fledged young bird, so that egg-laying must have been about 1 May. Williams (1955) also estimated from the gonadal development of his 6 specimens that the breeding season started in early May.

Song and calls

Song heard at the end of April and in early May is an oft-repeated sequence of 3 phrases, which I rendered as "ti-churr-cheesis", of which the middle one was ascending, but the last more subdued. Apparently agitated birds under observation had 2 calls (alarm?), one a "churr" as in the song, and another a loud metallic "tchink", clearly audible at 30m.

Other observations

More information is required on *S. philippae*'s ecological requirements. I can confirm the observations of Williams (1955) and Erard (1974) that it is particularly associated with rocky ground or red sandy soils, but I cannot be certain that this is always the case. Although 1-3 birds may often be seen together on their own, *philippae* is also a member of the mixed bird parties so characteristic of "thorn-bush" country. My observations with J. E. Miskell, extending over a few days only, suggest that the species is fairly common and widespread, and there are no grounds for including it in the "on the fringe of inclusion" category in the African Bird Red Data Book as is proposed (N. Collar *in litt*, 8.ix.81).

Males are larger than females. The wing-lengths of 5 males are 52-55.5mm (mean: 54.1) compared with 50-54.5mm (mean: 52.1) for 7 females. The only weights are: 2♂♂, 7.4 and 10g; 2♀♀, 7.9 and 9g.

Acknowledgements: I am grateful to Kathy Pruitt who kindly sent copies of papers to me in the field; to J. E. Miskell who contributed towards the observations in 1979 and 1980; to Nancy Gunkelman for drawing the distribution map, and to Dr. J. F. Monk for editorial help.

References:

- Archer, G. & Godman, E. M. 1961. *The Birds of British Somaliland and the Gulf of Aden*. Vol. 4. Oliver & Boyd: Edinburgh & London.
- Ash, J. S. & Pomeroy, D. E. 1981. Mapping schemes in the Afrotropical Region. *Scopus* 5: 36-38.
- Erard, C. 1974. Notes faunistiques et systématiques sur quelques oiseaux d'Ethiopie. *Bonn. Zool. Beitr.* 25: 76-86.
- Hall, B. P. & Moreau, R. E. 1970. *An Atlas of Speciation in African Passerine Birds*. Trustees of the Brit. Mus. (Nat. Hist.): London.

- Irwin, M. P. S. 1968. The relationship of the Crombecs *Sylvietta ruficapilla* Bocage and *Sylvietta whytii* Shelley. *Bonn. Zool. Beitr.* 19: 249-256.
- Mackworth-Praed, C. W. & Grant, C. H. B. 1960. *Birds of Eastern and North-eastern Africa*. Longmans: London.
- Roche, J. 1966. Recherches écologiques et systématiques sur les oiseaux de la République de Somalie (partie ex-italienne). *Monit. Zool. Ital.* 74, suppl: 44-79.
- 1975. Recherches ornithologiques en République de Somalie. Résultats de la mission de 1964. *Monit. Zool. Ital.* N.S. Suppl. 6: 103-140.
- 1977. Recherches ornithologiques en République de Somalie. Résultats des missions italiennes de 1968 et 1969. *Monit. Zool. Ital.* N.S. Suppl. 9: 201-231.
- Williams, J. G. 1955. A new species of *Sylvietta* from Italian Somaliland. *Ibis* 97: 582-583.
- Address: Dr. J. S. Ash, Division of Birds, National Museum of Natural History, Smithsonian Institution, Washington, D.C. 20560, U.S.A.

© British Ornithologists' Club 1982.

Plumage "atavism" in a Black-crowned Night Heron *Nycticorax nycticorax*

by M. Gochfeld, P. A. Buckley, Francine G. Buckley

Received 17 October 1981

Hérons with abnormally white plumage have seldom been reported, probably because white species, age-classes or colour morphs normally occur in many genera of the Ardeidae (see particularly for detailed discussion Berlioz 1949 and Hancock & Elliott 1978). On 12 June 1978, during a helicopter survey-census of colonially breeding waterbirds on Long Island, New York (Buckley & Buckley 1980), we flushed a whitish heron with a group of Black-crowned Night Herons *Nycticorax nycticorax* in a heronry on Gardiner's Island, Suffolk County, New York. Following up our initial impression of a ghostly cream-white night heron, we were surprised to see a bird whose white primaries stood out in contrast to the pale beige mantle and upper wing coverts with fine olive shaft streaking, a character combination immediately calling to mind the Squacco Heron *Ardeola ralloides*, a Eurafian species which has not been reported in the Western Hemisphere. The bird, however, seemed to have the blackish crown of a night heron. We landed and explored the colony on foot and P.A.B. was able to obtain a sufficiently good view to ascertain that the bird had a black crown, yellow-green legs, red eyes, and a stout blackish bill, all characteristics of an adult Black-crowned Night Heron. Only the very pale back colour was abnormal for this species.

The presence of normally coloured soft parts and crown suggests that leucism, one possible explanation, might not be the proper one. It is more likely that this individual was exhibiting a melanic schizochroism (loss of one of the 2-3 melanins normally occurring in its plumage). Although such schizochroic birds are often mistakenly referred to as leucistic, "partial albinos" (a contradiction in terms since albinism is an all-or-none phenomenon), or dilute individuals, these terms all represent separate genetic manifestations (see Buckley (1982) for distinctions among them).

The body-wide loss of melanin pigmentation in all but the crown, with normal carotinoid pigmentation, is more consistent with melanic schizochroism than with leucism. Which specific melanin might be involved is

unknown, as we find nothing published on night heron melanins nor their mode of inheritance. Difficult to reconcile with any of these explanations was the presence of the pale brownish back feathers. This might have been interpreted as an immature condition, but the back feathers of the Black-crowned Night Heron are among the first to change from the immature pattern (brown with white spots) to the adult (black) colouration. However, in this individual the back feathers were neither brown nor spotted, but were a pale beige colour with darker olive shafts, and we do not consider this to represent a case of neoteny—the retention of some juvenile characteristics by otherwise mature individuals.

The most significant aspect of this aberrant colouration is that the atypical plumage pattern closely resembled the normal plumage pattern of some members of the not-too-distantly related genus *Ardeola*. We consider this case analagous to previous reports of hybrids which resembled neither parental species in plumage, but instead rather a closely related third species or an inferred “ancestral” form. This phenomenon, termed plumage atavism, has been most extensively reported in waterfowl (e.g. Harrison & Harrison 1963, 1969, 1971, Gillham *et al.* 1966), and is summarized in Buckley (1982). The appearance of atavistic patterns has been generally interpreted as indicating the close genetic affinity of the taxa involved, and although no genetic data have ever been produced, these patterns are alleged to result from the reconstruction or recombination of ancestral genotypes and phenotypes in living animals.

Apart from the evolutionary implications, reports of abnormal pale or white plumage in herons are few. Sage (1962) reported an abnormal Grey Heron *Ardea cinerea* and Eurasian Bittern *Botaurus stellaris*, and Ross (1963) reported an American Bittern *B. lentiginosus* with a single white feather. On 12 May 1969 at Turrialba, Costa Rica, M.G. saw a Green Heron *Butorides virescens* with asymmetric white patches on the face, neck, and throat, and 2 white inner secondaries on the left wing. The prevalence of all-white species, of morphs and of juvenal plumages in the family hampers the detection of abnormally white plumages. The present report of an aberrant plumage resulting in a partially atavistic pattern, appears to be the first reported in the Ardeidae and one of the few outside the waterfowl.

Acknowledgements: P.A.B. and F.G.B.'s colonial waterbird survey-censuses have been supported by the Office of Scientific Studies, North Atlantic Region, U.S. National Park Service.

References:

- Berlioz, J. 1949. L'albinisme du plumage chez les Ardeides. *L'Oiseau* 19: 11–30.
- Buckley, P. A. 1982. Avian Genetics—in Petrak, M. (ed). *Diseases of Cage and Aviary Birds*, 2nd ed. Lea & Febiger: Philadelphia, in press.
- Buckley, P. A. & Buckley, F. G. 1980. Population and colony-site trends of Long Island waterbirds for five years in the mid 1970's. *Trans. Linn. Soc. N.Y.* 9: 23–56.
- Gillham, E., Harrison, J. M. & Harrison, J. G. 1966. A study of certain *Aythya* hybrids. *17th Ann. Rep. Wildfowl Trust*: 49–65.
- Hancock, J. & Elliott, H. F. I. 1978. *The Herons of the World*. Harper & Row: New York.
- Harrison, J. M. & Harrison, J. G. 1963. A Gadwall with a white neck ring and a review of plumage variants in wildfowl. *Bull. Brit. Orn. Cl.* 83: 101–108.
- — 1969. A goose hybrid with the head pattern of the Giant Canada Goose. *Bull. Brit. Orn. Cl.* 89: 31–32.
- — 1971. A back-cross hybrid involving Cinnamon Teal and Northern Shoveler, and remarks on hybrid characters in the group of “Blue-winged Duck”. *Bull. Brit. Orn. Cl.* 91: 99–103.

Ross, C. 1963. Albinism among North American birds. *Cassinia* 47: 2-21.

Sage, B. L. 1962. Albinism and melanism in birds. *Brit. Birds* 55: 201-225.

Addresses: Dr. Michael Gochfeld, Environmental & Community Medicine, U.M.D.N.J.
Rutgers Medical School, Piscataway, NJ 08854, U.S.A.

Paul A. Buckley & Francine G. Buckley, North Atlantic Regional Office, U.S.
National Park Service, 15 State Street, Boston, MASS 02109, U.S.A.

© British Ornithologists' Club 1982.

The Lesser Whistling Duck *Dendrocygna javanica* (Horsfield) in Flores

by S. Somadikarta and M. Noerdjito

Received 30 November 1981

Rensch (1931a: 504) reported 2♀♀ specimens of *Dendrocygna javanica* (Horsfield) from Sumbawa Island. These specimens were collected by J. Elbert in Dompu (8° 32' S, 118° 28' E) on 21 December 1909. This record seems to have been overlooked by Peters (1931: 153), Scott (1965: 34), Delacour (1975: 31, 44), and Howard & Moore (1980: 69), since none mentions that *D. javanica* occurs on the islands east of Wallace's line. In addition, Paynter (1963) recorded a wing of this species collected on Flores in 1956; and Schmutz (1977) recorded a ♂ on Flores with enlarged gonads in November.

In the collection of the Museum Zoologicum Bogoriense there are 2 ♂♂ of *D. javanica* from Flores Island (registered numbers 14499 and 14500) which were collected in Reo (8° 19' S, 120° 30' E) in 1911:— wings 185.0, 191.0; tails 45.0, 47.0; exposed culmens 40.0, 40.0; tarsi 50.0, 49.0 mm, respectively. Thirteen other specimens, of 9 different species, bearing similar data and field labels to those of the above two *D. javanica* males, were reported by Rensch (1931b: 400). The collector's name, Endih, appeared on some of the field labels. Rensch, however, did not mention these *D. javanica* specimens in his subsequent publications.

The occurrence of *D. javanica* on the islands of Sumbawa and Flores could be considered as stragglers, despite Schmutz record, and it is quite likely that unusually heavy rainfall creating suitable habitat could have affected their movement (cf. Delacour 1975: 44). The average yearly rainfall in Dompu during a period of 15 years (1925-1941) was 1354.0 mm, while the highest average monthly rainfall (278.0 mm) during the same period was for December (Berlage Jr. 1949: 156). The actual rainfall in December 1909 in Dompu could not be obtained. Reo's total rainfall in 1911 was 1098.0 mm. It is interesting to note that the monthly rainfall for January, February, November and December 1911 was 81.0, 344.0, 62.0 and 395.0 mm respectively (cf. Koninklijk . . . 1915: 80, 81). It is most likely, then, that the 2♂♂ specimens of *D. javanica* from Flores Island were collected either in February or in December 1911.

Acknowledgements: We thank Dr. S. Kadarsan for critically reading and commenting on an earlier draft.

References:

- Berlage, Jr., H. P. 1949. Regenval in Indonesië [Rainfall in Indonesia]. *Meteor. Geophys. Dienst Batavia. Verhand.* 37: 1-212, maps.
Delacour, J. 1975. *The Waterfowl of the World*. Vol. 1. London: Country Life.

- Howard, R. & Moore, A. 1980. *A Complete Checklist of the Birds of the World*. Oxford: Oxford Univ. Press.
- Koninklijk Magnetisch en Meteorologisch Observatorium te Batavia, Het. 1915. *Regenwaarnemingen in Nederlandsch-Indië*. 33e Jaargang. 1911. Deel 2. Uitkomsten. Batavia: Landsdrukkerij.
- Paynter, R. A. Jr. 1963. Birds from Flores, Lesser Sunda Islands. *Breviora* 182: 1-5.
- Peters, J. L. 1931. *Check-list of Birds of the World*. Vol. 1. Cambridge: Harvard Univ. Press.
- Rensch, B. 1931a. Die Vogelwelt von Lombok, Sumbawa und Flores. *Mitt. Zool. Mus. Berlin* 17: 451-637.
- 1931b. Ueber einige Vogelsammlungen des Buitenzorger Museums von den Kleinen Sunda-Inseln. *Treubia* 13: 371-400.
- Schmutz, E. 1977. *Die Vögel der Mangarrai (Flores)*. Ruteng: Flores.
- Scott, P. 1965. *A Coloured Key to the Waterfowl of the World*. London: W. R. Royle & Son Ltd.
- Address: S. Somadikarta and M. Noerdjito, Museum Zoologicum Bogoriense, Bogor, Indonesia.
- © British Ornithologists' Club 1982.

New subspecies of forest birds from Tanzania

by F. P. Jensen & S. N. Stuart

Received 30 November 1981

During 1981 a number of visits were paid by ornithologists to Mwanihana Forest (36° 50'E, 7° 45'S), a previously unstudied mountain forest on the eastern scarp of the Uzungwa Mountains, eastern Tanzania. Range extensions and some other notable records, together with a description of the area, have been documented elsewhere (Stuart *et al.* 1981, Stuart & Jensen 1982). In the present paper we revise the subspecies of *Buccanodon olivaceum* in Tanzania and describe 4 new subspecies of birds from the Mwanihana Forest.

GREEN BARBET *Buccanodon olivaceum*

Britton (1980) recognises 4 subspecies of the Green Barbet *Buccanodon olivaceum* in Tanzania. The nominate form ranges from the Tana River, south along the Kenya coast to the Usambara and Nguru Mountains in Tanzania. Specimens from Mahenge, eastern Tanzania, have also been assigned to this subspecies. Ripley & Heinrich (1969) described *uluguruensis* from the Uluguru Mountains. The subspecies *rungwensis* occurs in the highlands at the north end of Lake Malawi from Umalila and Isoko in Tanzania to the Misuku Hills in Malawi; while *woodwardi* is known from Nchingidi in southeast Tanzania and the Ngoye Forest in Natal, South Africa. A fifth subspecies, *belcheri*, occurs in southern Malawi on Thyolo (Cholo) Mt. and in northern Mozambique on Namuli Mt. (White 1965). Clancey (1979a) placed this species in a new genus *Cryptolybia*, and separated *woodwardi* as a species of *Cryptolybia*, Woodward's Barbet. Subsequently he shows convincingly that birds from Nchingidi are different from the nominate subspecies *C. w. woodwardi* of Ngoye Forest (Clancey 1979b) and he assigns birds from southeastern Tanzania to a new subspecies *C. w. hylophona*. We follow Clancey in all these changes except that for the time being we prefer to retain both *olivaceum* and *woodwardi* in the genus *Buccanodon*.

We compared a series of nominate *B. o. olivaceum* from the Usambaras, Ngurus and Kilifi on the Kenya coast with 5 males and 6 females from the Ulugurus. We believe there to be no justification for recognising a separate

subspecies *uluguruensis*, and prefer to assign Uluguru birds to the nominate form. None of the differences between *uluguruensis* and nominate birds described by Ripley & Heinrich (1969) were found to be valid or consistent in our comparison. Three specimens from Mahenge in the British Museum (Natural History) (BMNH) were, however, found to be strikingly different from the nominate form, but indistinguishable from a specimen collected in Mwanihana Forest. These 2 localities, 100 km apart, are geographically intermediate between the ranges of the nominate subspecies and *rungweensis*. Mahenge and Mwanihana birds differ from all other subspecies of *B. olivaceum*, and we propose that they be assigned to a new subspecies:

***Buccanodon olivaceum howelli* subsp. nov.**

Type: Adult female collected on 17 September 1981 by S. N. Stuart, K. M. Howell and T. A. van der Willigen in Mwanihana Forest, Uzungwa Mts., Tanzania. Elevation 1350 m. No. 1981.9.4. BMNH. Prepared by C. A. Msuya.

Diagnosis: Differs from the nominate form and *rungweensis* in having a far darker head and throat, with the cap virtually black, as opposed to grey. There is also a slight, but rather variable, golden tinge on the sides of the breast. Apart from the darker cap it also differs from *rungweensis* in lacking the grey breast. It is markedly different from both *belcheri*, which has a black throat and chest, and *B. woodwardi* which has distinct yellow ear coverts. We detected no differences between males and females.

Measurements of type (mm): Wing (chord) 86, tail 52, tarsus 18.8, culmen from base 19.0.

Range: The type locality, Mwanihana Forest on the eastern scarp of the Uzungwa Mts., Kilombero District, Morogoro Region and the Mahenge Mts., Mahenge District, Morogoro Region, eastern Tanzania.

Specimens examined:

B. o. olivaceum (23). Kilifi, coastal Kenya, 1♀ (BMNH); Amani, East Usambaras, Tanzania, 4♂♂, 3♀♀ (BMNH); Nguru Mts, Tanzania, 3♂♂ (BMNH) and 1♀ Zoologisk Museum, Copenhagen (ZMC); Uluguru Mts, Tanzania, 5♂♂, 5♀♀ (ZMC) and 1♀ (BMNH).

B. o. rungweensis (5). Isoko, Rungwe, Tanzania 1♂, 2♀♀ (BMNH); Matipa, Misuku, Malawi 1♂, 1♀ (BMNH).

B. o. belcheri (11). Thyolo Mt, Malawi 1♂, 2♀♀ (BMNH); Namuli Mt, Mozambique 2♂♂, 6♀♀ (BMNH).

B. o. howelli (4). Mwanihana Forest, Tanzania (type) 1♀ (BMNH); Muhulu Forest, Mahenge, Tanzania 2♂♂, 1♀ collected by R. E. Moreau on 30.1.1946 and 15.2.1946 (BMNH).

B. w. woodwardi (1). Echowe, Zululand, South Africa 1 unsexed (BMNH).

Remarks: This new subspecies is common in the type locality over a wide altitudinal span from 600 m to at least 1500 m. We have named this new form after Dr K. M. Howell, one of the collectors of the type specimen.

YELLOW-STREAKED GREENBUL

***Phyllastrephus flavostriatus uzungwensis* subsp. nov.**

Type: Adult female, ovary active, collected on 18 September 1981 by S. N. Stuart, K. M. Howell and T. A. van der Willigen in Mwanihana Forest, Uzungwa Mts, Tanzania. Elevation 1400 m. No. 1981.9.2. BMNH. Specimen prepared by C. A. Msuya.

Diagnosis: This form is identical to *tenuirostris* except that the yellow streaking merges on the belly to form a bright yellow patch. It differs from all other subspecies in the same way as does *tenuirostris* (as defined, for example, by White 1962).

Measurements of type (mm): Wing (chord) 88, tail 89, tarsus 18.9, culmen from base 20.0.

Range: Only known from the type locality, Mwanihana Forest, on the eastern scarp of the Uzungwa Mts, Kilombero District, Morogoro Region, eastern Tanzania.

Specimens examined:

P. f. flavostriatus (22). 9♂♂, 13♀♀ (BMNH).

P. f. alfredi (33). 16♂♂, 17♀♀ (BMNH).

P. f. olivaceogriseus (5). 3♂♂, 2♀♀ (BMNH).

P. f. vincenti (18). 7♂♂, 11♀♀ (BMNH).

P. f. kungwensis (6). 4♂♂, 2♀♀ (BMNH).

P. f. tenuirostris (63). Amani, Tanzania 17♂♂, 34♀♀; Dar es Salaam, Tanzania 1♂, 1♀; Nguru Mts, Tanzania 1♂; Pugu Hills, Tanzania 2♂♂; Uluguru Mts, Tanzania 1♂, 1♀; Pare Mts, Tanzania 1♂, 2♀♀; Netia, Mozambique 2♀♀ (BMNH).

P. f. uzungwensis (1) Mwanihana Forest, Tanzania 1♀ (type) (BMNH).

Remarks: The bright yellow belly in this new form is highly distinctive in the field. It is common in the type locality up to at least 1500m, and it probably occupies other suitable areas between the ranges of *tenuirostris* and *alfredi*.

DAPPLED MOUNTAIN ROBIN

***Modulatrix orostruthus sanjei* subsp. nov.**

Type: Adult male collected on 4 August 1981 by F. P. Jensen (original number 192) in Mwanihana Forest, Uzungwa Mts, Tanzania. Elevation 1250m. No. 1981.9.1. BMNH. Specimen prepared by F. P. Jensen.

Diagnosis: Differs from the nominate form in being much more strongly dappled on the underparts, and more olive and less reddish-brown on the wings and tail, sharing with the nominate form the distinct olive flanks. From *amani* it differs in being more strongly dappled, with the olive on the flanks being more extensive and darker, resulting in a much smaller yellow area on the belly. The culmen is longer and broader at the base than in either of the other 2 subspecies (Table 1).

TABLE 1
Culmen measurements of *Modulatrix orostruthus*

	Culmen from base (mm)	Width of culmen at base (mm)
<i>M. o. orostruthus</i> (type) ♂	21.7	6.9
<i>M. o. amani</i> (type) ♂	21.0	5.9
<i>M. o. amani</i> ♂	21.4	6.5
<i>M. o. amani</i> ♂	20.4	6.8
<i>M. o. amani</i> ♂	20.0	7.0
<i>M. o. sanjei</i> (type) ♂	23.3	7.8

Measurements of type (mm): Wing (chord) 89, tail 76, tarsus 28.6, culmen from base 23.3, weight 32g.

Range: Only known from the type locality at 1250 m in Mwanihana Forest, on the eastern scarp of the Uzungwa Mts, Kilombero District, Morogoro Region, eastern Tanzania. The species itself is known from only 2 other

localities, the nominate form from Namuli Mt, northern Mozambique, 850 km to the south, and *amani* from Amani, East Usambara Mts, Tanzania, 400 km to the northeast.

Specimens examined:

M. o. orostruthus (1). Namuli Mt, Mozambique 1♂ (type) (BMNH).

M. o. amani (4). Amani, Tanzania 2♂♂ (including type) (BMNH); Amani, Tanzania 2♂♂ (Peabody Museum).

M. o. sanjei (1). Mwanihana Forest, Tanzania 1♂ (type) (BMNH).

Remarks: We follow Benson & Irwin (1975) in placing this species in the genus *Modulatrix*. We name this new form after the village of Sanje, at the edge of the Mwanihana Forest, whose inhabitants have been of great assistance to us in our studies.

SWYNNERTON'S FOREST ROBIN

***Swynnertonia swynnertonii rodgersi* subsp. nov.**

Type: Adult male collected on 17 September 1981 by S. N. Stuart, T. A. van der Willigen and K. M. Howell in Mwanihana Forest, Uzungwa Mts, Tanzania. Elevation 1000 m. No. 1981.9.3. BMNH. Specimen prepared by C. A. Msuya.

Diagnosis: The male differs from that of the nominate subspecies in being more yellow and less orange on the breast. It is greyer and less olive on the back, but more olive and less grey on the crown and nape, giving a more uniform appearance. The under-tail coverts are almost white, as opposed to a rather variable buff colour in the nominate form.

We have not examined *S. s. umbratica*, from Mt. Gorongosa, Mozambique, described by Clancey (1974) as having a darker head than the nominate subspecies, with a darker and more rufous breast and sides. This clearly does not apply to the Mwanihana form. The female of *rodgersi* remains to be described.

Measurements of type (mm): Wing (chord) 71, tail 48, tarsus 23.3, culmen from base 16.8.

Range: Only known from the type locality at 1000 m in Mwanihana Forest on the eastern scarp of the Uzungwa Mts, Kilombero District, Morogoro Region, Tanzania. This appears to be an extremely isolated subspecies, separated from the 2 southern forms by 1300 km.

Specimens examined:

S. s. swynnertonii (15). Chirinda Forest, Zimbabwe 14♂♂ (BMNH); Chirinda Forest, Zimbabwe 1♂ (Cambridge University Museum of Zoology).

S. s. rodgersi (2). Mwanihana Forest, Tanzania 1♂ (type) (BMNH); Mwanihana Forest, Tanzania 1♂ collected by F. P. Jensen on 3 August 1981 (ZMC).

Remarks: We are pleased to name this new form after Dr. W. A. Rodgers, who first drew our attention to the biological importance of Mwanihana Forest. *Swynnertonia s. rodgersi* is known from the skins of only 2 individuals, mist-netted within a few metres of each other. There have been no observations in the field. We follow Irwin & Clancey (1974) in assigning this species to the monotypic genus *Swynnertonia*, rather than *Pogonocichla*.

Acknowledgements: We are grateful to Mr. C. W. Benson and Miss T. A. van der Willigen for their most helpful comments on an earlier draft of this paper. Dr. K. M. Howell, Miss T. A. van der Willigen, Mr. C. A. Msuya, Mr. N. Scharff and Mr. M. Stoltze were of invaluable assistance in the field, while Gibson Kihoma was a most dependable guide. Our visits to Mwanihana Forest would not have been possible without the help of Dr. W. A.

Rodgers, F.P.J. would like to thank the Director of the Zoologisk Museum, Copenhagen for encouragement and financial assistance. SNS undertook this research while in receipt of a Natural Environment Research Council (U.K.) studentship. His vehicle was supplied by WWF/IUCN as project number 1781. We are both indebted to the Tanzania National Scientific Research Council for allowing us to work in Tanzania, and the staff of the BMNH at Tring, and the Peabody Museum, Yale, U.S.A., for making skins available for study.

References:

- Benson, C. W. & Irwin, M. P. S. 1975. The systematic position of *Phyllastrephus orostruthus* and *Phyllastrephus xanthophrys*, two species incorrectly placed in the family Pycnonotidae (Aves). *Arnoldia (Rhodesia)* 7 (17): 1-10.
- Britton, P. L. (ed.). 1980. *Birds of East Africa*. Nairobi: EANHNS.
- Clancey, P. A. 1974. Subspeciation studies in some Rhodesian birds. *Arnoldia (Rhodesia)* 6 (28): 1-43.
- 1979a. Miscellaneous taxonomic notes on African birds, 53. *Durban Mus. Novit.* 12 (1): 1-17.
- 1979b. Miscellaneous taxonomic notes on African birds, 55. *Durban Mus. Novit.* 12 (5): 47-61.
- Irwin, M. P. S. & Clancey, P. A. 1974. A re-appraisal of the generic relationships of some African forest-dwelling robins (Aves: Turdidae). *Arnoldia (Rhodesia)* 6 (34): 1-19.
- Ripley, S. D. & Heinrich, G. H. 1969. Comments on the avifauna of Tanzania, II. *Postilla* 134: 1-21.
- Stuart, S. N., Howell, K. M., van der Willigen, T. A. & Geertsema, A. A. 1981. Some additions to the forest avifauna of the Uzungwa Mountains, Tanzania. *Scopus* 5: 46-50.
- Stuart, S. N. & Jensen, F. P. 1981. Further range extensions and other notable records of forest birds from Tanzania. *Scopus* 5: 106-115.
- White, C. M. N. 1962. *A Revised Check List of African shrikes, . . . babblers*. Lusaka: Government Printer.
- 1965. *A Revised Check List of African Non-passerine Birds*. Lusaka: Government Printer.
- Addresses: F. P. Jensen, Zoologisk Museum, Universitetsparken 15, DK-2100, Copenhagen, Denmark. S. N. Stuart, Department of Applied Biology, Pembroke Street, Cambridge, CB2 3DX, U.K.

© British Ornithologists' Club 1982.

The identity of certain early Australian types referred to the Cuculidae

by I. J. Mason

Received 9 December 1981

INTRODUCTION

Between 1788 and 1794 several artists were employed to illustrate natural history subjects at the first settlement of Port Jackson at Sydney Cove. Contrary to Mathews' statement (1911: 16), most of the drawings were of material from the environs of Port Jackson, the rest certainly from Australia (Hindwood 1970). In one set, now known as the 'Watling' drawings, 295 birds were depicted. Only some are signed by Watling, the rest appearing to be the work of unknown artists.

Some of these drawings were used as types by Latham (1801 b). His plates were copies of either the 'Watling' drawings or another set called the 'Lambert' drawings. It is not known from which set Latham derived his descriptions, but it is irrelevant as the Lambert drawings were also copied from the 'Watling' drawings (cf. Hindwood 1970: 19). The 'Watling' drawings therefore, should be considered the types of Latham's descriptions (cf. Schodde & Mason 1980). One of these, the Fan-tailed Cuckoo *Cuculus*

flabelliformis (Latham 1801 b) was formerly regarded as an earlier name for *Cuculus pyrrhophanus* (Vieillot 1817). Subsequent misinterpretation and confusion has left the identity of the binomial *Cacomantis flabelliformis* in doubt.

I will show that *flabelliformis* is the earliest valid name for the species currently known as *Cuculus pyrrhophanus* and that its type is the 'Watling' drawing No. 75. In addition I will discuss two of its synonyms, *rubricata* (Latham 1801 b) and *rufulus* (Vieillot 1817). To provide perspective I retraced the events culminating in the present doubt on the validity of these names. I have examined Latham's and Vieillot's type descriptions, the 'Watling' drawings in question, and an adequate series of specimens from Australia of both adult and immature Fan-tailed Cuckoos *Cacomantis flabelliformis* and Brush Cuckoos *Cacomantis variolosus* (Vigors & Horsfield 1827).

DISCUSSION

Cuculus flabelliformis Latham, 1801, Index Orn. Suppl. p. 30.

A number of the discussions on *flabelliformis* reported here do not relate to the 'Watling' drawing (No. 75) *per se* but to Latham's (1801 a, b) descriptions and plate. However, it is not Latham's descriptions and plate but the identity of the type, the original 'Watling' drawing, that is in question.

The identity of *flabelliformis* was first questioned by North (1906: 53) who concluded that Latham's latinized description of the "Fan-tailed Cuckow" (1801 b), derived from his English description (1801 a), was erroneously applied by Latham to *flabelliformis*. North further stated that Latham's (1801 a) description of *flabelliformis*—especially that of the tail—which agreed with his plate (cxxvi), did "not apply to the *Cacomantis flabelliformis* of the 'Catalogue of the Birds in the British Museum (Shelley 1891)' and writers in general". It was therefore North's opinion that the description Latham had applied to *flabelliformis* best fitted the Brush Cuckoo *Cacomantis variolosus*, to which species the name should be applied. Mathews (1911: 16) commented that Sharpe (1906: 121) accepted the 'Watling' drawing as that of a Fan-tailed Cuckoo but had pointed out many inaccuracies, and Mathews went on to say that the figure reproduced by Latham (1801 a) in his General Synopsis, showing a black throat band, could not be identified with any Australian cuckoo. He considered it indeterminable and even "extra-Australian". In his 1919 account Mathews continued to cast doubt on the use of *flabelliformis* for the Fan-tailed Cuckoo. Hartert (1925: 172) agreed with North and Mathews, that Latham's description "must have been a fanciful picture, as no such bird is yet known to exist. Latham's "Fan-tailed Cuckoo" is above brownish brown (*sic*), underneath orange, with a broad black collar across the jugulum".

Neither North nor Hartert saw the original 'Watling' drawing upon which Latham based his description, and therefore may be excused for their conclusions. Mathews (1911), however, had seen it, but when referring to *flabelliformis* as indeterminable he was not referring to the original drawing but instead to the plate in Latham's General Synopsis (1801 a), in which there are inaccuracies. It can thus be presumed that Mathews considered Latham's (1801 a) plate as the type. Moreover, his statement that Sharpe (1906) had noted inaccuracies in the illustration is erroneous. Sharpe made no such comment but instead simply referred Latham's descriptions and plate to the 'Watling' drawing, and stated that Latham's plate represents a

bird with a deeper red colour underneath and that the 'Watling' drawing may have faded.

Recently Hindwood (1970: 26) analysed the 'Watling' drawing: "Although the figure shows a dark neck-band there can be little doubt from the tail pattern, the white on the wing-shoulder and eye-ring, that it was intended to represent the Fan-tailed Cuckoo". Hindwood concluded that Latham's plate—"is based on either this painting or on Lambert drawing No. 26 . . . which is a copy of Watling No. 75"—shows a further exaggeration of this neck band.

The original 'Watling' drawing is unsigned and of poorer quality than the drawings signed by Watling himself. Presumably the unknown artist drew this bird from a specimen, emphasising what he thought were its diagnostic characters and exaggerating some of them. The drawing is an artistic interpretation in the style of the time, probably executed by an unskilled artist with inadequate painting material. Given these speculations, the drawing certainly represents a Fan-tailed Cuckoo, probably an immature specimen.

There is no doubt that Latham's original (1801 b) description of *flabelliformis*, latinized from his General Synopsis (1801 a) and referred to as the "Fan-tailed Cuckoo", originated from 'Watling' drawing No. 75. Latham never saw a specimen of this species, as was the case with a number of other species he described. He used the 'Watling' or (Lambert) drawing as a basis for his plate and descriptions, but altered in his plate and description, perhaps unwittingly, a number of crucial characters. The original 'Watling' drawing differs from that of Latham's (1801 a, b) descriptions and plate in these ways: the brown crown and side of head is barred faintly, with no great demarcation between the side of the face and throat; the breast band is narrower, less pronounced, and is not black as in Latham's (1801 a) plate, but instead washed with a dark brown tone; the neck and sides of the breast are lighter rufous (washed dull yellow) which is presumably the artist's ploy to contrast the darker neck band; the tones on the breast and vent are further reduced to light cream-yellow. Resembling the portrayal in the 'Watling' drawing, specimens of moulting immature Fan-tailed Cuckoos can retain some of the finely barred dark brown dorsal plumage and also exhibit a somewhat *broad band of rufous on the breast* (Marchant & Höhn 1980 and pers. obs.), lighter rufous on throat and abdomen. In the 'Watling' drawing the pronounced eye-ring is illustrated as white. The base of the lower mandible is light, as appropriate to an immature bird.

The fanned attitude and diagnostic barring of the tail in the original 'Watling' drawing is further evidence that it depicts a Fan-tailed Cuckoo; the outermost rectrices are barred with complete alternating black and white bars on the inner webs to the feather shafts, and are edged white on the edges of the outer webs. The bars decrease in width on the inner webs towards the innermost remiges and the central pair are edged white. These characters are not portrayed fully in Latham's (1801 a) plate.

Sylvia rubricata Latham, 1801, Index Orn. Suppl. p. 55.

In the case of *Sylvia rubricata* Latham the identity of the bird painted by Watling is not in doubt, but whether Latham's (1801 b) description applies to that drawing requires clarification.

Mathews (1911: 16), in rejecting *flabelliformis* as indeterminable and not to be outdone by North (1906) in the usage of *Cuculus rufulus* Vieillot for the Fan-tailed Cuckoo, prepared a case to validate *Sylvia rubricata*. Watling's

drawing (No. 202), upon which Latham based *Sylvia rubricata*, is an accurate representation of a Fan-tailed Cuckoo and therefore would have been the next available name for this species. Mathews (1911) noted that Watling's drawings Nos. 202 and 203, are both inscribed as 'Ruddy Warbler', the latter portraying a female, and although Latham's (1801 a) description of the Ruddy Warbler in his General Synopsis was based on both drawings, he latinized only the description that applied solely to the Cuckoo (No. 202) in his Ind. Orn. Suppl. (1801 b). Drawing No. 203 portrays an *Eopsaltria australis* (cf. Sharpe 1906: 143). Mathews (1911) stated that "Latham's description is inaccurate only in the colour of the feet, which are given as "flavi", and which the figure shows as being dark.". Mathews (1912: 10-12) referred to his previous publication in regard to the validity of *rubricatus* and described two new subspecies, *Cuculus rubricatus athertoni* and *C.r. albani*. He continued to use *rubricatus* (Mathews 1919: 319-320) and described another subspecies, *Cacomantis rubricatus eyrei*. However, he commented that "the type painting is very good, but the feet are drawn wrong, as the artist was not an ornithologist".

Mathews (1922: 399-400), apparently influenced by suggestions from the Checklist Committee of the Royal Australasian Ornithologists' Union, reversed his decision on the validity of *rubricatus* for the Fan-tailed Cuckoo. Acting on advice from this Committee that "the description given by Latham of his Ruddy Warbler did not agree with the cuckoo", Mathews (1922) reviewed the matter and decided that the drawing of the cuckoo which Latham himself recognised as his Ruddy-Warbler could not have been the one upon which Latham's description was based. He repeated both Latham's English and latinized descriptions (1801 a, b), drawing attention to the passage—"... the plumage above brownish ash colour: beneath wholly ferruginous, inclining to yellow . . . [Latham]", concluding that it did not fit the drawing from which it was said to have been derived. Mathews (1922) was of the opinion that "... as the upper surface is bluish-grey and the under-surface is pinkish-red, without any inclination to yellow, and the tail shows the white markings of the cuckoo; . . . there can be no hesitation in rejecting the description of the Ruddy-Warbler as referring to that painting, notwithstanding Latham's note".

Although Hartert (1925: 172) overlooked Mathews' (1922) publication, he had corresponded with Mathews and was aware that Mathews no longer used the name *rubricatus*. On the basis of that understanding Hartert (1925) quoted part of Latham's (1801 a) description, and then stated that it did not agree with Watling's drawing No. 202 which represents a *Cacomantis* but is inscribed as Latham's *Sylvia rubricata*.

As previously stated by Mathews (1911) Watling's 2 drawings Nos. 202 and 203, are inscribed as 'Ruddy Warbler'. Although Latham may have thought that these 2 drawings could have been of the same species—as marked on the originals—he did not commit himself. His original English description (1801 a: 249(34)) is based only on Watling's drawing No. 202 and fits it extremely well (*pace* Mathews 1922, Hartert 1925). Latham's (1801 b) latinized account refers only to that description. In fact the bird in Watling's drawing No. 202 is ash-grey dorsally; reddish-brown (rust-coloured) inclining to yellow ventrally—not pinkish-red as stated by Mathews (1922); flight feathers and tail brown, and feet dull cream brown.

Thus Mathews' (1911) comment that Latham's (1801 a) original English description of the Ruddy Warbler was based on Watling's drawings Nos. 202 and 203 is unfounded. Latham (1801 a) described Watling's drawing No. 203 separately, under the name Gold-bellied Warbler (249: 33) and did not refer to or include this description in his 1801 b publication. Mathews (1911) may have been confused, in that on page 249, the description of the 'Ruddy Warbler' (No. 34) was followed by the 'Chaste Warbler' (No. 35) with a comment that it was found with the last. However, as pointed out by Sharpe (1906: 143), the latter description referred to Watling drawing No. 200 (*Sylvia casta* Latham). In his 1823 account Latham aligned his descriptions of Watling's drawings with much more certainty on page 138:—170, Ruddy Warbler; 171, New-Holland Warbler "*Native name Thadaguan. Is a very common and domestic bird, with the actions of the Redbreast of Europe* (my italics); has many things in common with the last: probably the female [Latham 1823]"; 172, Chaste Warbler.

It is obvious in comparing these two accounts, of the Golden-bellied Warbler and the New-Holland Warbler, that they are both of Watling's drawing No. 203. These descriptions both fit this drawing, and also, the words in my italics in the description (Latham 1823) are inscribed on the original Watling drawing. Thus, this further confirms that the Ruddy Warbler and Golden-bellied/New-Holland Warbler were taken from 'Watling' drawings Nos. 202 and 203 respectively. There is no reason to suspect that the original inscriptions on these drawings were incorrect, as suggested by Hartert (1925). These inscriptions and all the others on the 'Watling' series are accurate in that they can be referred to any of Latham's descriptions in his 1801 a and b accounts.

Cuculus rufulus Vieillot, 1817, Nouv. Dict. d'Hist. Nat., Ser. 8: 234.

In discussing the validity of *flabelliformis*, North (1906) stated that if *Cuculus rufulus* Vieillot were applicable to the Fan-tailed Cuckoo it would be the next available name for this species. Mathews (1912) evaded the question of the identity of *rufulus* by justifying an earlier name, *rubricatus*, for the Fan-tailed Cuckoo, but later regarded *rufulus* as a synonym of *rubricatus* (Mathews 1919).

Hartert (1925: 172) was the first to dispute the application of *rufulus*, stating that Vieillot's description is of a young *Cacomantis*, probably *Cacomantis variolosus* and that the description is insufficient to form a definite conclusion. Hartert (1925: 169) disputed Pucheran's (1852) opinion that it was of a young *cineraceus* (= *flabelliformis*), stating that he judged it "from the description, as he expressly stated, and had not seen the type, which was not in the Paris Museum, but in the collection of M. Baillon". In turn, Mathews (1926: 54) stated that he was "not satisfied that this [Vieillot's description] does not fit the immature of the Fan-tailed Cuckoo only, and it cannot be mixed up with the Square-tailed Cuckoo. The immatures are so different, and as the type came from New South Wales we know to what form to look. Granted that there is some doubt . . .". In reply to this, Hartert (1926: 56) once again said that "*rufulus* is in my opinion most certainly too uncertain to adopt it for any form with absolute certainty".

After taking the previous discussions into account Amadon (1942) commented that "after studying Vieillot's description with a series of juvenals of both species" (*C. pyrrhophanus* = *flabelliformis* and *C. variolosus*) he

could not justify the restriction of the name to either. The sections of Vieillot's (1817) description that Amadon translated, e.g. (upper parts) "variées de brun et de roussatre", suggested that the description referred to the Brush Cuckoo rather than to the Fan-tailed Cuckoo. He went on to say that those who use this name (*rufulus*) for the Fan-tailed Cuckoo comment "that the remiges are ashy, the rectrices similar but darker and blackish" and concluded that this could refer to either. "The description of the belly, "le ventre de deux gris, l'un presque blanc et l'autre fonce . . .", might apply to many individuals of either species." He stated further that there were a number of other points of Vieillot's description that could fit either species—"not to mention other possibilities, if the locality should be wrong", deciding that it was impossible from Vieillot's description to identify *Cuculus rufulus*.

There is no reason to doubt that the two specimens Vieillot (1817) described under *Cuculus rufulus* originated from Australia, contrary to Amadon (1942). Pucheran (1852: 562), in discussing *rufulus*, commented: "This is another young individual like *C. cineraceus* . . ., this species is referred to *flabelliformis* by Latham". He obviously had no trouble in identifying *C. cineraceus* from this description contrary to Hartert's (1926) experience.

To be able to place Vieillot's description of *rufulus* in perspective it is necessary to describe the juveniles from Australia of both the Fan-tailed Cuckoo and the Brush Cuckoo (which, incidentally are quite dissimilar, contrary to Amadon (1942)), and compare them with a 'complete' translation of the description of the name in question. In discussing the uncertainty of *rufulus*, Amadon (1942) commented on disjointed pieces of this description, even omitting a critical sentence. However, the complete translation indicates *rufulus* is referable to a Fan-tailed Cuckoo.

(a) *Juvenile Fan-tailed Cuckoo*: dorsally generally dark brown, barred with alternating dull, finely patterned red-brown and darker grey-brown; ventrally, throat and breast is more mottled with grey browns, alternating with white and washed with russet on occasions; varying to a lighter and mottled belly and abdomen with various tones of greys—in some specimens almost white; remiges plain dark grey-brown, rectrices black edged and or barred russet (with a half bar pattern).

(b) *Juvenile Brush Cuckoo*: dorsally generally lighter in tone than Fan-tailed, boldly patterned with alternating dark grey-brown and lighter tones of russet; ventrally boldly patterned with pronounced alternating bars of dark grey-brown and white-washed light russet, in some specimens extending to the belly, but the belly itself and the abdomen are approaching white, the brown bars less intense; remiges mid brown-grey, rectrices darker grey-brown and approaching that of the Fan-tailed; both the rectrices and remiges are edged and barred russet (half bar pattern).

A translation of Vieillot's (1817) description is as follows (my italics): 'All the dorsal parts vary from brown to rufous-ish [russet], the throat and breast are of the last tint and very lightly spotted white; the underside of the two specimens grey, one almost white, the other darker; the remiges ashy, the rectrices like the remiges but tending towards blackish and having the sides tending towards russet [rufous] . . .'. In comparing this description with those of the previous 2 there is little doubt that the patterns and contrasting colours are more similar to those of the juvenile Fan-tailed Cuckoo and thus *rufulus* is best placed with its synonymy.

CONCLUSION

On the basis of the previous evidence *flabelliformis* should be reinstated for the Fan-tailed Cuckoo not only because it is the earliest valid name but also for uniformity and stabilization of nomenclature as this was the accepted name in literature for this species until the publication of Peters (1940) and in the *Emu* until the 1950s, (cf. RAOU 1955) including the R.A.O.U. (1926) Checklist. I also retain the use of the genus *Cacomantis* contrary to Condon (1975) (cf. Schodde & Mason, in prep.).

The nominate subspecies of the Fan-tailed Cuckoo and its synonyms are as follows:

Cacomantis flabelliformis flabelliformis (Latham).

Cuculus flabelliformis Latham, 1801, Index. Orn. Suppl., p. 30 (Sydney area, New South Wales).

*Sylvia rubricata** Latham, 1801, Index. Orn. Suppl., p. 55 (Sydney area, New South Wales).

Cuculus rufulus Vieillot, 1817, N. Dict. d'Hist. Nat., n. ser. 8: 234 (Nouvelle-Hollande = Australia).

Cuculus prionurus Lichtenstein, 1823, Verz. Doubl. Zool. Mus. Berlin p. 9 (New South Wales).

Cuculus cineraceus Vigors & Horsfield, 1827, Trans. Linn. Soc. London, 15: 298 (Parramatta, New South Wales).

Cuculus incertus Vigors & Horsfield, 1827, Trans. Linn. Soc. London 15: 299 (Parramatta, New South Wales).

Cuculus rubricatus athertoni Mathews, 1912, Austral. Av. Rec. 1: 11 (Atherton, northern Queensland).

Cuculus rubricatus albani Mathews, 1912, Austral. Av. Rec. 1: 12 (Albany, Western Australia).

Cacomantis rubricatus eyrei Mathews, 1918, Birds Aust. 7: 320 (Eyre Peninsula South Australia).

*Now that *Sylvia rubricata* is placed within the synonymy of the Fan-tailed Cuckoo the next available name for the Rock Warbler is *Origma solitaria* (Lewin) (see also Mathews 1922).

Distribution. Eastern Australia from Cape York Peninsula south along the Great Dividing Range and its western foothills to Tasmania, coastal south-eastern South Australia to Eyre Peninsula and the southwestern sector of Western Australia.

Cuculus pyrrhophanus Vieillot is adequately discussed by Pucheran (1852), Hartert (1925: 174; 1926) and Amadon (1942: 15) and does not warrant further discussion. Thus *pyrrhophanus* now becomes restricted to the subspecies of *Cacomantis flabelliformis* that inhabits New Caledonia and Loyalty Islands.

Acknowledgements: I would like to thank the Librarians of CSIRO Division of Wildlife Research for obtaining the needed references. I also thank Mr. E. Slater for allowing me to inspect colour slides of the original 'Watling' drawings in his possession, Drs. G. Caughlay and J. H. Calaby, Messrs. F. H. J. Crome, S. A. Parker and G. C. Richards for advice and constructive criticism of the manuscript.

References:

- Amadon, D. 1942. Birds collected during the Whitney South Sea Expedition, L. Notes on some non-passerine genera, 2. *Amer. Mus. Novit.* 1176: 1-21.
 Condon, H. T. 1975. *Checklist of the Birds of Australia*. Part 1, Non-Passerines. Melbourne: Royal Australian Ornithologists' Union.

- Hartert, E. 1925. Review of the genus *Cacomantis* Müll. *Novit. Zool.* 32: 164-174.
 — 1926. Answer to the 'Remarks on "Review of the genus *Cacomantis*".' *Novit. Zool.* 33: 55-56.
 Hindwood, K. A. 1970. The 'Watling' Drawings, with incidental notes on the 'Lambert' and the 'Latham' Drawings. *Proc. Roy. Zool. Soc. New South Wales* 1968-9: 16-32.
 Latham, J. 1801a. *A General Synopsis of Birds, Supplement II*. London: Leigh & Sotheby.
 — 1801b. *Supplementum Indicis Ornithologici*. London: Leigh & Sotheby.
 — 1823. *A General History of Birds*. Vol. 7. Winchester: Jacob & Johnson.
 Marchant, S. & Höhn, E. O. 1980. Field notes on the Fan-tailed Cuckoo. *Emu* 80: 77-80.
 Mathews, G. M. 1911. On some necessary alterations in the Nomenclature of Birds, pt. 2. *Novit. Zool.* 18: 1-22.
 — 1912. Notes on Australian Cuckoos. *Austral. Av. Rec.* 1: 2-22.
 — 1919, 1922. *The Birds of Australia*, Vol. 7 (1919) and Vol. 9 (1922). London: Witherby & Co.
 — 1926. Remarks on 'Review of the genus *Cacomantis* Müll'. *Novit. Zool.* 33: 53-54.
 North, A. J. 1906. Remarks on the names of some Australian birds. *Ibis* Ser. 8 (6): 53-57.
 Peters, J. L. 1940. *Check-list of Birds of the World*. Vol. 4. Cambridge: Harvard University Press.
 Pucheran, J. 1852. Etudes sur les types peu connus du Musée de Paris, 6. B. Types de Vieillot. *Rev. et Mag. Zool.* Ser. 2 (4): 555-564.
 RAOU Checklist Committee. 1926. *Official Checklist of the Birds of Australia*. Melbourne: Gov. Printer.
 — 1955. Seventh Supplement to the Official Checklist of the Birds of Australia (Second Edition). *Emu* 55: 187-190.
 Schodde, R. & Mason, I. J. 1980. *Nocturnal Birds of Australia*. Melbourne: Lansdowne Editions.
 — (in prep.). 'Birds' in *A Survey of the Vertebrate Land Fauna of the Alligator Rivers Region*. CSIRO Division of Wildlife Research Tech. Paper Series.
 Sharpe, R. B. 1906. 'Birds' in *The History of the Collections contained in the Natural History Departments of the British Museum*. Vol. 2. London: British Museum (Natural History).
 Shelley, G. E. 1891. Cuculidae. *Catalogue of the Birds in the British Museum*. Vol. XIX: 209-434. London: British Museum (Natural History).
 Vieillot, L. P. 1817. In *Nouveau Dictionnaire d'histoire naturelle*, . . . Vol. 8: 234. Paris: Chez Deterville.
 Address: I. J. Mason, CSIRO, P.O. Box 273, Atherton, Queensland 4883, Australia.
 © British Ornithologists' Club 1982.

A new species of *Miraфра* (Alaudidae) and new races of the Somali Long-billed Lark *Miraфра somalica*, Thekla Lark *Galerida malabarica* and Malindi Pipit *Anthus melindae* from southern coastal Somalia

by P. R. Colston

Received 17 February 1982

MIRAFRA SSP

Six specimens of a new lark were collected by Dr J. S. Ash 13 km north of Uarsciek (= Warsheikh), some 80 km NE of Mogadiscio, in southern Somalia on 9 and 10 July 1981. He found that they differed significantly from other members of the *Alaudidae* that he knew from his wide field experience in north Africa. A cursory glance through the literature (e.g.

(Mackworth-Praed & Grant 1955) showed them probably to be a new species, and as there was insufficient comparative material in the National Museum of Kenya, he kindly forwarded them to the British Museum (Natural History) (BMNH) for appraisal. Comparison with BMNH material shows the Uarsciek larks to be similar in structure and plumage to other *Miraфра* species and closest to *M. somalica*, which occurs at the same locality and has been collected at Uarsciek, 2° 17' N, 45° 44' E (Roche 1966), although it is not shown in Hall & Moreau (1970). I have pleasure in naming the new lark after Dr John Ash who has contributed much valuable work on the birds of Somalia.

***Miraфра ashi* sp. nov.**

Holotype: Unsexed adult (probably ♂ on size); 13 km north of Uarsciek, southern Somalia, 2° 17' N, 45° 50' E, 10 July 1981. Collected by Dr J. S. Ash and prepared by J. E. Miskell. Lodged in the British Museum (Natural History), B.M. No. 1982-3-1.

Description: Similar in structure to the sympatric *Miraфра somalica*, but smaller in its proportions (Table 1), with a shorter bill and darker plumaged above. Whereas *somalica* is bright cinnamon-rufous above, *ashi* is greyish-brown above with a very faint overlaying wash of cinnamon. It is also considerably more streaked and scaly looking above in general appearance than *somalica*.

The head is ash-brown with a light cinnamon wash to the nape and hind neck. The feathers on the forehead have blackish brown centres with buff to grey tips and the longer grey-brown feathers of the crown are narrowly streaked dark brown. There are signs of a vestigial crest with a few elongated crown feathers reaching 11 mm in length. The streaking on the crown extends to the hind neck and upper back. The feathers of the mantle, shoulders and lower back have their centres marked with dark brown and are edged with narrow dark brown subterminal bands fringed with conspicuous buff to white edges, giving the upper parts a scalloped appearance. The rump is greyish-brown, the feathers narrowly edged whitish to buff, and the upper tail coverts have inverted V-shaped bands of dark brown near their tips with paler buff edging. The wing coverts, which are pale cinnamon buff, have their central shafts narrowly marked dark brown and margined with narrow dark brown subterminal bands broadly edged with buffish-white. The tertials are pale brown, each with a dark brown central shaft, and narrow dark brown subterminal bands with broad buffish white edges (2 mm wide). Faint barring is present on the tertials with some 8 narrow grey-brown bars clearly visible. Like *somalica*, the primaries and outer secondaries have broad cinnamon margins for the basal two-thirds of their length and the remaining wedge-shaped portions are dusky brown. The underwing coverts are pale cinnamon and unmarked. The sides of the face and ear coverts are whitish streaked dark greyish with a cinnamon wash to the ear coverts. The lores are white but the buffish-white eyestripe is narrow, ill defined and does not extend much beyond the eye, whereas in *somalica* it is well marked and extends to the nape. The throat and sides of the neck are buffish-white finely spotted with grey on the lower throat enlarging to browner spots and streaking on the upper breast, which is suffused with

pale cinnamon-buff. The sides of the body and flanks are also cinnamon-buff, with a few narrow brown streaks and the rest of the underparts are whitish-buff to white on the belly. The undertail coverts, like *somalica*, are streaked dark brown. The tail feathers, which are narrower and more pointed than in *somalica*, are dusky-brown with the central pair edged cinnamon. The outer tail feathers are narrowly edged white (1.5 mm wide) on both their inner and outer webs; *somalica* also has white outer tail feathers but the white is more conspicuous (3-3.5 mm wide). It is worth mentioning that the rather similarly plumaged *M. sharpei*, which is found in a restricted area of North Somalia, has no white in the tail, and also differs from both *somalica* and *asbi* in its very short curved, not straight hind claw (6-7 mm), compared with *somalica* (11-15 mm) and *asbi* (11-15 mm).

Colour of soft parts at time of collecting: iris dark ? brown; legs and feet creamy; upper mandible dark grey, lower mandible pale bluish-grey.

Measurements of type: Wing (flattened) 89, tail 51, culmen from base of skull 24, tarsus 30, hind claw 14.5 mm; weight 40.2 gms at time of collecting.

TABLE I

Measurements of *Mirafr asbi* sp. nov. and *M. somalica* (mm and gm) (0=unsexed)

<i>M. asbi</i> (5 ♂, 1 ♀)			<i>M. somalica</i> (9 ♂♂, 3 ♀♀)		
wing	(unsexed)	80-94 (mean 86.6)	wing	♂♂	95-107 (mean 102)
tail	(unsexed)	50-56 (mean 52.8)	tail	♂♂	58-72 (mean 66.6)
bill	(unsexed)	21-24 (mean 22.9)	bill	♂♂	23-29 (mean 26.6)
tarsus	(unsexed)	29-30 (mean 29.4)	tarsus	♂♂	30-34 (mean 31.8)
weight	(unsexed)	31.3-41.9 (mean 37)			
wing	♀	82	wing	♀♀	90-95 (mean 92)
tail	♀	47 (moulting)	tail	♀♀	58-60 (mean 58.7)
bill	♀	22	bill	♀♀	23-25 (mean 24.3)
tarsus	♀	29	tarsus	♀♀	30-32 (mean 31)
weight	♀	35.7			

Other specimens collected: Only one of the 3 adults (all collected on 10 July), which includes the type, was sexed. It was a ♀ in full breeding condition with the largest ova measuring 12 mm and another 8 mm. What is unusual about this specimen is that it was in full wing and tail moult. The central tail feathers are only half grown and are greyer than the type, being dusky-grey tipped white. The remaining 3 birds collected on 9 July are not fully adult. They have broad cinnamon to buffish-white edges to the primaries and secondaries and are browner on the head and back. The brown spotting on the breast is finer and the underparts show more cinnamon-buff and less white on the belly. The two youngest have the shortest bills (21, 21 mm), which are paler horn. They have paler legs and feet than the type and have less well developed hind-claws (11, 12 mm). All 3 immatures show more white in their outer tail feathers than the adult, with one of the 2 youngest having most of the outer tail feather white for the last 16 mm or so of its length.

MIRAFRA SOMALICA

Mirafra somalica has been thought to be monotypic and confined to a rather small well-defined area in the red soil desert of the plateau of British Somalia east and south of Burao (see Fig. 1), extending into north Somalia and occurring nowhere else. Archer (Archer & Godman 1961) considered the real stronghold of this lark to be on the Arori Plain near Burao, with the

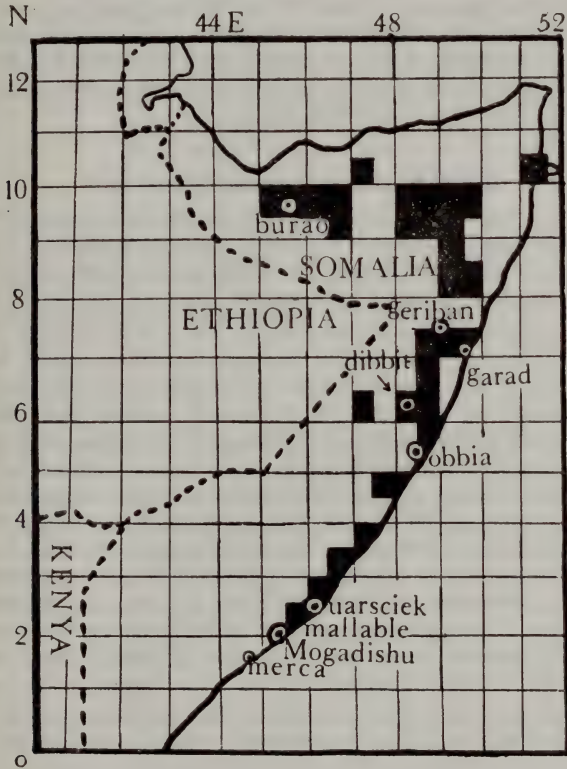


Figure 1. Map to show the more extensive range of *Mirafra somalica* in Somalia than was previously known. It incorporates mainly sight records plus a few specimens collected by Dr. J. S. Ash together with existing data.

■ $\frac{1}{2}^{\circ}$ squares where species now known to exist.

extreme western limit of its range on the Tuoyo Plain 60 km further west. The known eastern limit of its range in the north is some 400 km eastwards, stretching into the northern Haud to the vicinity of Gardo (see Map 7, Hall & Moreau 1970). The type of *somalica* was collected at Dibbit in the Mudug area, some 400 km south of Gardo. In August 1962, Roche collected an adult ♂ and ♀ between Geriban and Garad and an adult ♂ at Geriban some 160 km northeast of the type locality (Roche 1975). He also collected an adult ♂ much further south at Uarsciek on 16 Sep 1962 (Roche 1966). More

recently Ash obtained an adult ♂ some 24 km northeast of Uarsciek (see map) on 30 Mar 1979, which he kindly presented to BMNH (B.M. No. 1980.7.1). Through the kindness of Dr Jean Roche in arranging a loan of some of the specimens that he collected, I have been able to compare the 2 southern Uarsciek larks with the other specimens from the Geriban area together with the BMNH type of *somalica* from Dibbit and more northern birds in the BMNH collections from around Burao and Gardo. When compared with the type, the Uarsciek larks differ significantly in the colouration of their upper parts, being darker brown to chestnut-brown above. The breast and sides of the neck are also more heavily streaked. I have pleasure in naming this new form after Dr Jean Roche who has contributed much valuable ornithological work in Somalia.

***Mirafra somalica rochei* subsp. nov.**

Holotype: ♂; 24 km northeast of Uarsciek, southern Somalia, 02° 17' N, 45° 50' E, 30 Mar 1979. Collected by Dr J. S. Ash, prepared by Mohamed Mumin. Lodged in the British Museum (Nat. Hist.), B.M. No: 1980.7.1.

Description: When compared with the type the upper parts are chestnut-brown rather than pale cinnamon-rufous. The crown is also considerably darker chestnut-brown with a few feathers on the forehead having dark brown centres and some darker streaking on the nape. The feathers of the back and shoulders are brownish-chestnut with narrow dark brown centres and are edged pale greyish-white. The wings are browner than the type and the primaries and outer secondaries have darker cinnamon edges for the basal two-thirds of their length. The under wing coverts are also darker cinnamon. The chin and throat are white with dark brown spotting on the lower throat and more extensive chestnut-brown streaking on the breast. The sides of the neck and breast are more conspicuously washed than the type with dark cinnamon and streaked dark brown, the markings on the throat and breast of the type being much paler, fewer and less well defined. The rest of the plumage is similar to the type, although the Uarsciek birds would appear to be whiter on the belly.

Colours of soft parts: Iris light chocolate; tarsus creamy-white; bill colour was not noted at time of collection, but from the skin is dark horn and pale whitish-horn below with a dark brown tip. Colours at time of collection.

Measurements of type: Wing (flattened) 95, tail 64, culmen from base of skull 26, tarsus 32 mm.

Other specimens and remarks: The ♂ collected on 16 Sep is in moult and is similar to the type although it is browner above. The feathers of the forehead have darker blackish-brown centres and the head and neck are more strongly streaked dark brown.

When the more northerly birds from Burao, Arori Plain and Gardo are compared with the rest of the material available they would appear to be appreciably larger (see Table 2) than specimens from the central localities of Geriban and Dibbit or the more southern birds of Uarsciek, etc. Not only is there a cline of decreasing size from north to south but there appear to be clinal differences in the colouration of the upper parts. In the north the specimens have the upperparts rich cinnamon-rufous, including the rump.

The type of *somalica* from Dibbit and the other Geriban and Garad specimens are greyer on the rump and upper tail coverts and the overall colouration of the upperparts is less rufous with more noticeable grey fringes to the feathers on the back.

TABLE 2

Measurements (mm) of *Mirafra somalica* to show size difference between the northern birds and the central/southern birds.

<i>N. Somalia</i> (Burao, Arori Plain & Gardo) <i>No. of specimens: 4 ♂♂, 2 ♀♀</i>			<i>Central and S. Somalia</i> (Geriban, Garad, Dibbit, Uarsciek) <i>No. of specimens: 5 ♂♂, 1 ♀</i>		
wing	♂♂	103-107 (mean 105)	wing	♂♂	95-102 (mean 98.4)
tail	♂♂	68-72 (mean 69.5)	tail	♂♂	58-66 (mean 63.2)
bill	♂♂	26-29 (mean 27.8)	bill	♂♂	23-26 (mean 24.8)
tarsus	♂♂	30-32 (mean 31.3)	tarsus	♂♂	31-32 (mean 31.8)
wing	♀♀	91, 95 (mean 93)	wing	♀	90
tail	♀♀	58, 60 (mean 59)	tail	♀	58
bill	♀♀	25, 25 (mean 25)	bill	♀	23
tarsus	♀♀	31, 32 (mean 31.5)	tarsus	♀	30

*

*

*

GALERIDA MALABARICA

A very grey example of *Galerida malabarica* collected in Somalia by Dr John Ash is quite different from the typical sandy-brown *G. m. ellioti* inhabiting the more northern and interior areas of Somaliland. Also in the B.M. collection is another similarly greyish-brown, fresh plumaged bird from the same area of southern coastal Somalia. It was collected at Merca (100 km south of Ash's specimen from Mallable) by J. G. Williams on 29 Jan 1954. White (1961), gives the range of *ellioti* as the interior of British Somaliland south into Italian Somaliland to Galkayu (=Gallaciao) and Merca. He mentions that specimens from the latter are greyer, less sandy-yellow than the more northern birds and may be separable. The 2 specimens from Mallable and Merca confirm his earlier opinion, being greyer above and lacking the warm sandy brown tones typical of *ellioti*. There is evidently a greyer plumaged population in the Mogadishu area.

Galerida malabarica mallablensis subsp. nov.

Holotype: Adult ♂; Mallable 30 km northeast of Mogadishu, southern Somalia, 2° 12' N, 45° 37' E. 16 Dec 1978. Collected by Dr J. S. Ash. Lodged in the British Museum (Natural History), B.M. No: 1982-3-6.

Description: The head is heavily streaked dark brown like *ellioti*, but having the feathers edged pale greyish or pale buffish rather than warm sandy-brown, and lacking the cinnamon wash to the nape typical of *ellioti*. The sides of the head are whitish strongly streaked dark brown, but lack the cinnamon wash to the ear coverts present in *ellioti*, and the eye stripe is white rather than creamy-buff. The upperparts have a distinct greyish caste when compared with a long series of the more warm rufous-brown or sandy-brown *ellioti*. The back and mantle are strongly marked dark greyish-brown

and the feathers are edged mainly pale greyish or whitish with a few pale greyish-buff. The wings are grey-brown rather than sandy-brown and the wing coverts are broadly edged whitish, whereas they are margined pale sandy-brown in *elliotti*. The lower back and rump are greyer and the upper tail coverts are pale buff in contrast to the more brightly coloured cinnamon upper tail coverts of *elliotti*. The breast is more heavily streaked dark brown and the sides of the body are washed greyish rather than the buffish-brown of *elliotti*. The underparts are white, lacking the warm buff tones to the breast and more creamy underparts of *elliotti*. The underwing coverts are very pale buffish-white in contrast to the darker cinnamon-buff of *elliotti*. The tail is greyer, less brown and the outer tail feathers are whitish rather than pale tawny-brown. Overall the bird is colder grey-brown above and whiter below, lacking all the warmer buff or brownish tones present in *elliotti*.

Colour of soft parts (at time of collecting): Iris dark ? brown; legs pale brown; bill greyish-horn, paler below.

Measurements of type: Wing (flattened) 96, tail 51, culmen from base of skull 16.5, tarsus 22 mm, weight 33.8 gms.

Other East African forms: Apart from *elliotti* and *mallablensis* of Somalia, 4 other races occur in East Africa, south of the Sahara: *praeternissa* in the highlands of Ethiopia and Eritrea; *harrarensis* known from 3 specimens collected in the north of the province of Harrar, Ethiopia (Erard & Jarry 1973); *buei* from the mountains of Bale, Ethiopia (Erard & de Naurois 1973), separated by the Rift valley from those found in other high plateaux in Ethiopia; and *huriensis* of north Kenya, where it has been collected within 8 km of the frontier with Ethiopia (Benson 1945).

*

*

*

ANTHUS MELINDAE

Seven specimens of *Anthus melindae* were obtained by Dr John Ash from 2 separate localities in southern Somalia. This is a coastal species of very limited distribution found only in Kenya and southern Somalia. Britton (1980) records that it is numerous in the littoral grasslands of Kenya (from Ngomeni to Karawa), and widespread though less common in the contiguous riparian grasslands of the lower Tana River. However, little has been recorded of its breeding biology in southern Somalia, although more recently Roche (1975) has collected specimens in the Giohar area (100 km from the coast), 50 km north of Balad. A series of 3 ♂♂ (in fresh plumage) collected by Ash on 6 Feb 1979 together with an earlier ♀ (in moult), on 28 Dec 1978, from Hawaala Buray, near Balad (2° 26' N, 45° 17' E), are typical examples of this dark earth-brown plumaged pipit. Shortly after collecting the 3 earlier February birds, Ash obtained a further 3 ♀♀ on 16 Feb 1979, near the coastal locality of Mallable. These coastal specimens differ significantly both from the Hawaala Buray series taken some 60 km inland from Mallable and also from specimens in the B.M. collections from Kenya (Chamgamwe, Mombasa and Malindi), including the type from Malindi. They are smaller in size, and the upperparts are paler ash-brown. Below they are whiter and the breast is streaked paler grey-brown in contrast to the

strongly streaked dark brown breast, flanks and abdomen in both sexes of typical *melindae*.

***Anthus melindae pallidus* subsp. nov.**

Holotype: Adult ♀; Mallable, 30 km northeast of Mogadishu, southern Somalia, 2° 12' N, 45° 37' E. 16 Feb 1979. Collected by Dr J. S. Ash. Lodged in the British Museum (Nat. Hist.), B.M. No: 1980-7-2.

TABLE 3. Comparative differences in size between *Anthus melindae melindae* and *pallidus* (o = unsexed)

<i>A. m. melindae</i>					<i>A. m. pallidus</i>	
Localities: Hawaala Buray, Malindi, Chamgamwe, Mombasa.					Locality: Mallable	
No. of specimens (8) 5 ♂♂, 2 ♀♀, 1 o.					No. of specimens 3 ♀♀	
wing	♂♂ 83-91 (mean 85.6)	♀♀ 83, 83	(mean 83)	unsexed(ad) 85 mm	wing	♀♀ 76-79 mm (mean 77.7)
tail	„ 53-61 „ 57.6)	„ 55, 58	(„ 56.5)	„ „ 58 mm	tail	„ 53-55 mm (mean 54)
bill	„ 18 („ 18)	„ 16.5, 17.5 („ 17)	„ „ 17 mm	bill	„ 16 mm („ 16)	
tarsus	„ 26-29 („ 27.4)	„ 24, 26 („ 25)	„ „ 26 mm	tarsus	„ 24-25 mm („ 24.7)	
weight	„ 24-27 („ 25.3(3))	„ — („ —)	„ „ — gm	weight	„ 19-20.5 gm („ 19.6)	

Description: The head and upperparts are a paler ash-brown when compared with nominate *melindae*, which is dark earth-brown above. The wings are also pale greyish-brown with the coverts edged whitish or light buff rather than tawny-buff. Again the rump and upper tail coverts are pale greyish-buff rather than dark brown typical of *melindae*. The sides of the head are pale greyish-buff and the malar stripe is fainter, areas of which are dark brown in *melindae*. The streaking on the underparts is paler ash-brown much less distinct and less extensive than in *melindae*, which is heavily streaked dark brown on the chest, flanks and centre of the abdomen. The belly is whiter and the undertail coverts are creamy-white rather than buff. The sides of the body are pale ash-brown with a few fine darker brown streaks, whereas *melindae* is buffish-brown with broader dark brown streaking. The central pair of tail feathers are paler brown than in *melindae* and contrast with the rest of the dark brown tail, and the 2 outer pairs of tail feathers are more extensively paler ash-brown than in *melindae*. The 3 Mallable birds would appear to be smaller in their proportions than those from Hawaala Buray or other Kenya specimens, including the type from Malindi (see Table 3).

Colour of soft parts (at time of collecting): Iris dark ? brown; legs pale sandy; bill dark brown, paler sandy below (from skin).

Measurements of type: Wing (flattened) 78, tail 55, culmen from base of bill 16, tarsus 24 mm, weight 20.5 gms.

Acknowledgments: I should like to thank Prof. Dr. Benedetto Lanza of the Museo Zoologico de 'La Specola', Italy, and Dr. Jean Roche of the Muséum National d'Histoire Naturelle, Paris for the loan of specimens and Dr. John Ash for the specimens that he has generously presented and forwarded to BMNH. John E. Miskell prepared the larks referred to in this paper. Derek Goodwin kindly examined the specimens with me and confirmed my descriptions and colour renderings and I. C. J. Galbraith read an earlier draft of the paper.

References:

Archer, G. F. & Godman, E. M. 1961. *The Birds of British Somaliland and the Gulf of Aden*. Vol. 3. London: Oliver and Boyd.

- Benson, C. W. 1945. Observations from Kenya Colony, Uganda and Tanganyika Territory. *Ibis* 87: 90-95.
- Britton, P. L. (ed). 1980. *Birds of East Africa*. Nairobi: EANH.S.
- Erard, C. & de Naurois, R. 1973. A new race of Thekla Lark in Bale, Ethiopia. *Bull. Brit. Orn. Cl.* 93: 141-2.
- Erard, C. & Jarry G. 1973. A new race of the Thekla Lark in Harrar, Ethiopia. *Bull. Brit. Orn. Cl.* 93: 139-140.
- Hall, B. P. & Moreau, R. E. 1970. *An Atlas of Speciation in African Passerine Birds*. London: British Museum (Nat. Hist.).
- Mackworth-Praed, C. W. & Grant, C. H. B. 1955. *Birds of Eastern and Northeastern Africa*. Vol. 2. London: Longmans, Green and Co.
- Peters, J. L. 1960. *Check-list of Birds of the World*. Vol. 9. Cambridge: Harvard University Press.
- Roche, J. 1966. Recherches écologiques et systématiques sur les oiseaux de la République de Somalie (partie ex-Italienne). *Monit. Zool. Ital.* 74. Suppt.: 44-79.
- 1975. Recherches ornithologiques en République de Somalie. Resultats de la Mission de 1964. *Monit. Zool. Ital.* No. 6: 103-140.
- White, C. M. N. 1961. *A Revised Check List of African Broadbills . . . Pipits*. Lusaka: Government Printer.

Address: P. R. Colston, British Museum (Natural History), Tring, Herts., England.

© British Ornithologists Club 1982.

First record of Wilson's Phalarope *Phalaropus tricolor* from Suriname

by Arie L. Spaans and Louis Autar

Received 29 January 1982

Wilson's Phalarope *Phalaropus tricolor* breeds mainly in western and interior North America and migrates predominantly through the western United States, eastern Pacific and western South America to winter in southern South America (AOU 1957, Meyer de Schauensee 1971, Blake 1977). During the autumn migration period, however, it is observed rarely but regularly on the Atlantic coast of North America (Pough 1951) and incidentally in the Caribbean (Bond 1971). The species has been seen once (November 1977) in Venezuela (Altman & Parrish 1978), which, as far as we are aware is the only record from northeast South America. We report here another sight record from this part of the continent.

On 23 September 1980 we observed at a distance of 50-100 m two phalaropes in a coastal lagoon near Krofajapasi, c. 50 km ENE of Paramaribo, Suriname. The birds were swimming alone when we located them, but a short time later we saw several Lesser Yellowlegs *Tringa flavipes* and Stilt Sandpipers *Micropalama himantopus* walking around between the swimming birds and realized that the swimming birds had shorter legs and were probably Wilson's Phalaropes.

We described the birds as medium-sized waders with a small head and a rather long straight bill. When standing, the body looked similar in size to that of the Lesser Yellowlegs or Stilt Sandpipers feeding near them. When swimming, however, the birds appeared rather smaller. The upperparts were

very pale brownish, much paler than those of the Lesser Yellowlegs and Stilt Sandpipers. The wing tips were dark brown, the rump, side of neck and under-surface white with an indication of pale buffy brown on the side of the abdomen. The head was typical of a phalarope, and the dark crown was separated from a dark stripe behind the eye by a white superciliary.

The species has not been reported previously from the Guianas. Haverschmidt (1968) does not mention it from Suriname, nor does Snyder (1966) from Guyana. Our observation represents therefore the first record of the species from this part of South America and the second one from northeast South America.

Given the well-established proclivity of waders towards vagrancy, the Surinam and Venezuelan records can be best considered as accidentals. It must be pointed out, however, that Wilson's Phalarope has recently extended its breeding range in Canada northeastwards and now breeds as far north and east as James Bay, Ontario (Morrison & Manning 1976). In the same period there has been an increase in spring sightings in eastern North America, and beside the initial route along the Atlantic coast, the species may have established a second, inland, route through the Appalachian Mountains (Patterson 1980). The present record may therefore reflect the species' recent spread to the east in North America.

Acknowledgements: We are grateful to the Foundation for Nature Preservation in Suriname for the use of facilities at Krofajapasi and for logistical support. A. L. Spaans' visit to Suriname was partially supported by grant WR 87-20 from the Netherlands Foundation for the Advancement of Tropical Research (WOTRO), The Hague. This note is a contribution of the 1980 Dutch mini-expedition to Suriname.

References:

- American Ornithologists' Union. 1957. *Check-list of North American Birds* (5th ed.). Amer. Orn. Union: Baltimore, Maryland.
- Altman, A. & Parrish, C. 1978. Sight records of Wilson's Phalarope, Ruff, and other shorebirds from Venezuela. *American Birds* 32: 309-310.
- Blake, E. R. 1977. *Manual of Neotropical Birds*. Vol. 1. University of Chicago Press: Chicago-London.
- Bond, J. 1971. *Birds of the West Indies* (2nd ed.). Collins: London.
- Haverschmidt, F. 1968. *Birds of Surinam*. Oliver & Boyd: Edinburgh.
- Meyer de Schauensee, R. 1971. *A Guide to the Birds of South America*. Oliver & Boyd: Edinburgh.
- Morrison, R. I. G. & Manning, T. H. 1976. First breeding records of Wilson's Phalarope for James Bay, Ontario. *Auk* 93: 656-657.
- Patterson, R. L. 1980. Possible unrecognized spring migration routes of Wilson's Phalarope. *Wader Study Group Bulletin* 29: 36.
- Pough, R. H. 1951. *Audubon Water Bird Guide*. Doubleday: Garden City, N.Y.
- Snyder, D. E. 1966. *The Birds of Guyana*. Peabody Museum: Salem, Mass.

Addresses: Dr. A. L. Spaans, Research Institute for Nature Management, Kemperbergerweg 67, 6816 RM Arnhem, Netherlands.

L. Autar, Surinam Forest Service, P.O. Box 436, Paramaribo, Suriname.

Additional information on the Rock Pratincole *Glareola nuchalis* in Togo

by Robert A. Cheke

Received 2 March 1982

In a previous note (Cheke 1980) I described observations made in 1979 at a small colony of the Rock Pratincole *Glareola nuchalis liberiae* at Landa-Pozanda (9° 31' N, 1° 17' E) on the Kara river in Togo. In 1979 I was unable to locate a nest or to confirm whether any of the population were migrants. During May to July 1980 and August to December 1981 I made further observations at the same colony and include here information on a nest found in 1980 and on the birds' movements.

On 16 May 1980, 6 birds were present and by 1 June it was clear from their behaviour that they were separated into pairs, occupying territories which were in the same positions as those tenured in the previous year. One of these was an expanse of rock, whereon I found an egg on a ledge sheltered by overhanging stone. The nest site and egg were typical for the species (Bannerman 1953, Mackworth-Praed & Grant 1970), the egg having a buff background mostly obscured by very dark brown, almost black, blotches interspersed with rich brown freckles and measuring 28 x 21 mm.

Paired birds were again seen to perform the greeting displays described in my earlier note and sometimes held their collars flared, revealing the maximum expanse of chesnut feathering, for as long as 20 seconds. Some birds continued this display, with their collars remaining flared, by bobbing their heads up and down and keeping their bills opened slightly.

On 14 June an additional adult bird had appeared, but the egg had vanished and there were no signs of any young. Neither were there any young birds visible on 21 June when all 3 pairs were in their usual positions; yet on 15 July 7 adults and 2 well-grown juveniles, almost as large as the adults, were present. By this time the river had risen substantially and the nest site was submerged. Two days later the young birds were seen flying and they were still present on 24 July.

From June to mid-August 1981 about 6 birds were again present (Dr. S. E. O. Meredith) but on 25 August I was surprised to count 23. Of these, 21 were together in a single flock, only one of whose members was distinguished as a juvenile. On 5 September, 3 adults remained and a single adult alone was present during visits on 11, 24 and 31 October. This latter individual had an entirely white nuchal collar and so was ascribed to the eastern race *G. n. nuchalis*, which has not previously been recorded so far west. Benson & Irwin (1965) suggested that any records of *G. n. nuchalis* within the range of *G. n. liberiae* would represent off-season movements and Snow (1978) states that both subspecies have been collected together in Cameroon. No Rock Pratincoles of either race were present on 29 November.

The occurrence of the flock of *G. n. liberiae* in late August followed by their departure, and at least 2 months absence, strongly suggests that the birds are migratory, although their winter quarters remain unknown. The only winter record I have is of one bird on 28 November 1981 on the Mono river, a few kilometres north of Tetetou (7° 1' N, 1° 30' E) in Togo, close to where Dekeyser (1951) recorded a pair on 22 May 1950.

References:

- Bannerman, D. A. 1963. *The Birds of West and Equatorial Africa*. Vol. 1. Oliver and Boyd: Edinburgh and London.
- Benson, C. W. & Irwin, M. P. S. 1965. Some intra-African migratory birds, II. *Рукн* 3: 45-55.
- Cheke, R. A. 1980. A small breeding colony of the Rock Pratincole *Glareola nuchalis liberiae* in Togo. *Bull. Brit. Orn. Cl.* 100: 175-178.
- Dekeyser, P. L. 1951. Mission A. Villiers au Togo et au Dahomey (1950). III. Oiseaux. *Etudes Dabomméens* 5: 47-84.
- Mackworth-Praed, C. W. & Grant, C. H. B. 1970. *African Handbook of Birds*. Series 3. Birds of West Central and Western Africa. Vol. 1. Longmans: London.
- Snow, D. W. (ed). 1978. *An Atlas of Speciation in African Non-passerine Birds*. British Museum (Nat. Hist.): London.

Address: Dr. R. A. Cheke, Centre for Overseas Pest Research, College House, Wrights Lane, London W8 5SJ, U.K.

© British Ornithologists' Club 1982.

BOOKS RECEIVED

Schmidl, D. 1982. *The Birds of the Serengeti National Park, Tanzania*. Pp. 132. 8 habitat photographs, maps. British Ornithologists' Union, c/o The Zoological Society, Regent's Park, London NW1 4RY. £11 (£10 to BOU members during 1982).

The fifth in the series of annotated avifaunal lists being published by the BOU. Over 500 species are assessed for status, habitat, breeding, distribution and movements. The introductory sections cover the history, geography, geology, climate, vegetation and habitats of the Park, as well as breeding seasons and migration. There is a comprehensive bibliography and the indices cover scientific and English names.

Watling, Dick. 1982. *Birds of Fiji, Tonga and Samoa*. Pp. 176. Many photographs in colour; illustrated in black-and-white and colour by Chloe Talbot-Kelly. Millwood Press: Wellington, N.Z. £25. (Distributed in U.K. by Croom Helm Ltd., St. John's Road, London.)

The extravagance and price of this excellently produced book should not be allowed to disguise the fact that it is a comprehensive review of the avifauna of 3 well known islands, explored for 14 years by the author, a committed conservationist, most especially in an area where conservation is paramount, if for no other reason than that 56% of its land birds are endemic, 10 of the species being in endemic genera or subgenera. The photographic illustrations are lavish, especially of the Fiji region, and sometimes dramatic. The paintings, drawings and silhouettes are both decorative and helpful for identification, though most birds, even the doves, look startled or severe.

There are good maps and sections on the ornithological history, composition of the avifauna, and brief discussion of ecological isolation, breeding and moult, and conservation. The systematic list is divided into Land and Sea Birds, distribution maps being provided for the former in most cases. The text gives features of identification, flight, voice, food, breeding, habitat and range and allied species. There is a full bibliography and much research has gone into providing vernacular names of all the birds. The whole is a successful, unassumingly written account of an intriguing avifauna and will be invaluable for anyone visiting or researching the three islands, though regrettably at A4 size it is unsuitable for use in the field.

Curry-Lindahl, K. 1981. *Bird Migration in Africa*. Academic Press: London. Vol. 1, Pp. xxiii + 444, 255 distribution maps. £41.40; Vol. 2, Pp. xxiii + 251, 32 habitat photographs, bibliography. £20.60. (London publication date: November 1982.)

Professor Curry-Lindahl began compilation for this work in 1961, since when, of course, there have been several major works of importance on the subject. Vol. 1 briefly describes 'Africa as a Bird Continent' and deals with migration to and from Africa, Eurasian migrants both to and within Africa and their 'time tables', with many maps indicating distribution and 'routes', American vagrants and other non-Palaearctic visitors. There is then a 200 page section on African migrants within Africa, which usefully tabulates and maps such information in one publication for perhaps the first time. Vol. 2 covers related aspects more briefly, such as step migration, ecology of Eurasian birds in Africa, physiology and migrating birds and their relationships with man in Africa.

Two main criticisms arise. First, interpretation of the importance of any of the maps is handicapped by no mention being made of the type of projection used; it is not equal area nor is it gnomonic. The latter is almost essential in plotting 'routes and directions' unless one assumes that the great majority of birds do *not* navigate the shortest route between two places a long distance apart; many dog-leg and loop migrations appear quite different on gnomonic projection, while it can also be seen then, for example, that the Willow Warbler breeding in the far NE of Siberia must leave on a course *north* of West to reach its winter quarters in East Africa, a fact unimaginable from the projection used here. Thus, the arrows which "show migration routes and directions of migration" need considering with care and the author's warning that "arrows indicating a single flight direction . . . should not be interpreted in a conclusive way" is apposite, though not for the reason he gives.

Secondly, the author does not state the sources of his summaries in the tables and maps (which form two thirds of Vol. 1), though apparently the data are often drawn from his own long experience in Africa. Comparison of the winter quarters given on the maps for nearly all the Palaearctic migrants shows considerable (even allowing for a different projection), sometimes controversial, differences from those in Moreau's (1972) 'The Palaearctic-African Bird Migration Systems' (incidentally cited in 2 incorrect forms in the text and the bibliography). It would be valuable to know from the bibliography of nearly 700 titles from which sources the new assessments over the last decade had been made. Without his own comprehensive bibliography and knowledge or both, the reader is unable to make an informed judgement of the author's opinions and accuracy. Nor is the source of the breeding distributions in the Palaearctic given, though this closely follows Moreau, who mainly followed Voous's (1960) 'Atlas'.

In summary, the book is a tabulation and mapping of a recent assessment of the distribution and movement of migrants inside and into Africa from the Western Palaearctic, with a wide-ranging text which does not attempt to go too deeply into the subject.

A word of disapprobation for the publishers is not out of place. Academic Press could well have organised this work comfortably into one volume: the text print is extravagantly large and the tables (in reasonable size type) waste a huge area of paper, Tables 3-5 for example, covering 169 pages of Vol. 1, almost unbelievably so. To charge £62 for 2 volumes when one would have sufficed, and £20 for Vol. 2 alone, consisting of only 173 pages, plus 66 repeated *verbatim* from Vol. 1 and placing the bibliography in Vol. 2 only, will be considered outrageous by very many potential readers. Surely, major, and indeed all, scientific works should be published with a view to reaching as wide an audience as possible compatible with a reasonable financial return; but the deliberate policy adopted in this case discourages the average ornithologist from buying his own copy and it seems unlikely that the volumes will sell widely except to libraries and institutions,

NOTICE TO CONTRIBUTORS

Papers, whether by Club Members or by non-members, should be sent to the Editor, Dr. J. F. Monk, The Glebe Cottage, Goring, Reading RG8 9AP, and are accepted on the understanding that they are offered solely for publication in the *Bulletin*. They should be typed on one side of the paper, with double-spacing and a wide margin, and submitted with a *duplicate copy on airmail paper*.

Scientific nomenclature and the style and lay-out of papers and of References should conform with usage in this or recent issues of the *Bulletin*, unless a departure is explained and justified; but informants of unpublished observations (usually given as *in litt.* or pers. comm.) should be cited by initials and name only, e.g. "... catches wasps (B. Eater)", but "B.B.C. Gull informs me that . . .". Photographic illustrations, although welcome, can only be accepted if the contributor is willing to pay for their reproduction.

An author wishing to introduce a new name or describe a new form should append *nom.*, *gen.*, *sp.* or *subsp. nov.*, as appropriate, and set out the supporting evidence under the headings "Description", "Distribution", "Type", "Measurements of Type" and "Material examined", plus any others needed.

A contributor is entitled to 10 free reprints of the pages of the *Bulletin* in which his contribution, if one page or more in length, appears. Additional reprints or reprints of contributions of less than one page may be ordered when the manuscript is submitted and will be charged for. Authors may be charged for proof corrections for which they are responsible

BACK NUMBERS OF THE BULLETIN

Available on application to Dr D. W. Snow, British Museum (Natural History), Tring, Herts HP23 6AP as follows: 1981-2 (Vols. 101 & 102) £3 each issue, 1980 (Vol. 100) No. 1 £4, No. 2, 3 & 4 £2 each, 1973-9 (Vols. 93-99) £2 each issue (4 issues per year for Vol. 93 and after), 1969-72 (Vols. 89-92) £1.50 each issue (6 per year), 1929-68 (Vols. 50-88) £1 each issue (generally 9 per year), earlier than Vol. 50 £2 each issue (generally 9 per year); Indices Vol. 70 and after £1 each, Vols. 50-69 £2 each, Vol. 49 and before £4 each. Long runs (at least 10 years) for Vol. 50 and after are available at reduced rates on enquiry. Orders over £50 post free.

MEMBERSHIP

Only Members of the British Ornithologists' Union are eligible to join the Club: applications should be sent to the Hon. Treasurer, Mrs. D. Bradley, 53 Osterley Road, Isleworth, Middlesex, together with the current year's subscription. The remittance and all other payments to the Club should always be in *sterling* unless an addition of £1.00 is made to cover bank charges for exchange, etc. Payment of subscription entitles a Member to receive all *Bulletins* for the year. Changes of address and revised bankers' orders or covenants (and any other correspondence concerning Membership) should be sent to the Hon. Treasurer as promptly as possible.

SUBSCRIPTION TO BULLETIN

The *Bulletin* may be purchased by non-members on payment of an annual subscription of £13.00 (postage and index free). Send all orders and remittances in sterling, unless an addition of £1.00 is made to cover bank charges, to the Hon. Treasurer. Single issues may be obtained as back numbers (see above).

CORRESPONDENCE

Correspondence about Club meetings and other matters not mentioned above should go to the Hon. Secretary, R. E. F. Peal, 2 Chestnut Lane, Sevenoaks, Kent TN13 3AR.

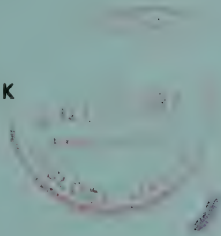
CONTENTS

	Page
CLUB NOTES	87
D. C. DUFFY. Land-birds of a guano island off the coast of Peru ...	87
J. S. ASH. The Somali Short-billed Crombec <i>Sylvietta philippae</i> in Somalia and Ethiopia	89
M. GOCHFELD, P. A. BUCKLEY & FRANCINE G. BUCKLEY. Plumage "atavism" in a Black-crowned Night Heron <i>Nycticorax nycticorax</i> ...	92
S. SOMARDIKARTA & M. NOERDJITO. The Lesser Whistling Duck <i>Dendrocygna javanica</i> (Horsfield) in Flores	94
F. P. JENSEN & S. N. STUART. New subspecies of forest birds from Tanzania	95
I. J. MASON. The identity of certain early Australian types referred to the Cuculidae	99
P. R. COLSTON. A new species of <i>Miraфра</i> (Alaudidae) and new races of the Somali Long-billed Lark <i>Miraфра somalica</i> , Thekla Lark <i>Galerida malabarica</i> and Malindi Pipit <i>Anthus melindae</i> from southern coastal Somalia	106
A. L. SPAANS & L. AUTAR. First record of Wilson's Phalarope <i>Phalaropus tricolor</i> from Suriname	114
R. A. CHEKE. Additional information on the Rock Pratincole <i>Glareola nuchalis</i> in Togo	116
BOOKS RECEIVED	117

Bulletin of the
British Ornithologists' Club



Edited by
Dr. J. F. MONK



FORTHCOMING MEETINGS

Tuesday, 18 January 1983 in the Senior Common Room, South Side, Imperial College, Prince's Gardens, S.W.7 at 6.30 p.m. for 7 p.m., **Mr Robin Woods**, who worked in the Falkland Islands for 6 years, author of "The Birds of the Falkland Islands" and of "Falkland Island Birds" (July 1982), will speak on *Some Birds of the Falkland Islands*. Those wishing to attend should send their acceptance with a cheque for £6.15 a person to reach the Hon. Secretary at 2 Chestnut Lane, Sevenoaks, Kent TN13 3AR (telephone Sevenoaks (0732) 450313) not later than first post on Thursday, 13 January.

Tuesday, 8 March 1983, at the same venue and time, **Dr James Cadbury**, Head of Research at the R.S.P.B., will speak on *The Restoration of Habitats for Birds*. Those wishing to attend should send their acceptance with a cheque for £6.15 a person to reach the Hon. Secretary (address above) not later than first post on Thursday, 3 March.

Tuesday, 17 May 1983, at the same venue and time, **Dr D. W. Snow** will speak on *Hummingbirds in the Colombian Andes*.

Tuesday, 5 July 1983 Mr Paul Goriup will speak on *Bustards*.

Many copies of the *Bulletin* must get thrown away annually by Members, copies which the Club would welcome. Please send all unwanted copies, and ask your Executors to do the same, to the Hon. Treasurer at 53 Osterley Road, Isleworth, Middlesex TW7 4PW at any time. Postage will be refunded if requested.

COMMITTEE

D. R. Calder (*Chairman*)
R. E. F. Peal (*Hon. Secretary*)
Dr. J. F. Monk (*Editor*)
R. A. N. Croucher
P. J. Conder, O.B.E.

B. Gray (*Vice-Chairman*)
Mrs. D. M. Bradley (*Hon. Treasurer*)
J. G. Parker
Rev. G. K. McCulloch, O.B.E.

Bulletin of the BRITISH ORNITHOLOGISTS' CLUB

Vol. 102 No. 4

Published: 20 December 1982

The seven hundred and forty-first Meeting of the Club was held in the Senior Common Room, South Side, Imperial College, London, S.W.7 on Tuesday, 21 September 1982 at 7 p.m. The attendance was 27 Members and 7 guests.

Members present were: D. R. CALDER (*Chairman*), F. B. S. ANTRAM, Major N. A. G. H. BEAL, K. F. BETTON, Mrs DIANA BRADLEY, R. D. CHANCELLOR, P. J. CONDER, R. A. N. CROUCHER, J. H. ELGOOD, Sir HUGH ELLIOTT, D. J. FISHER, Dr C. H. FRY, A. GIBBS, B. GRAY, D. GRIFFIN, P. HOGG, Dr D. C. HOUSTON, A. M. HUTSON, J. KING, Dr A. G. KNOX, Revd. G. K. McCULLOCH, Dr J. F. MONK, R. E. F. PEAL, S. A. H. STATHAM, K. V. THOMPSON, M. P. WALTERS and Lieut.-Col. T. C. WHITE.

Guests present were: Mrs N. A. G. H. BEAL, Mrs I. McCULLOCH, Dr AMICIA MELLAND, Mrs DIANA MONK, M. M. MORTON, IAN PRESTT and Mrs S. A. H. STATHAM.

Dr D. C. Houston gave a stimulating address on "Vultures", dealing especially with the feeding ecology of vultures in parts of East Africa where he had studied them closely. A lively discussion followed.

The seven hundred and forty-second Meeting of the Club was held at Sevenoaks on Saturday, 16 October 1982, commencing at 10.30 a.m.

Those participating were:

Members: Mrs DIANA BRADLEY, R. E. F. PEAL and M. P. WALTERS.

Guests: M. J. BRADLEY, Miss B. CRAWFURD, Dr D. M. HARRISON, A. HEATON and Mrs ELIZABETH PEAL.

In the morning Dr D. L. Harrison conducted the party round the Harrison Zoological Museum, showing the fine collection of mounted specimens and particularly interesting examples from the some 30,000 bird skins and many mammal skins. He also explained that use of the collections for research purposes is welcomed. Lunch was kindly provided by Mrs Peal at 2 Chestnut Lane. In the afternoon Mr A. Heaton conducted the party round the Sevenoaks Experimental Wildfowl Reserve; he explained its origins and its aims and showed the various species present. After a dry morning there was rain in the afternoon and a very interesting Meeting closed at 4.30 p.m. We extend our thanks to Dr D. L. Harrison and to Mr A. Heaton.

Variations in the white markings of the Blackish Nightjar *Caprimulgus nigrescens*

by J. Ingels and J.-H. Ribot

Received 2 March 1982

Crepuscular and nocturnal nighthawks and nightjars (*Caprimulgidae*) roost during the day at suitable sites in their habitats. During this period of inactivity, they trust their cryptic colour pattern blending perfectly with their surroundings to escape predators who rely upon eyesight. Their intricate colour patterns are so tedious to describe that descriptions in field guides are usually limited to general impressions of plumage colours and obvious differentiating characters.

In the genus *Caprimulgus*, identification characters are restricted to a throat

band, patches in the primaries and the tips of the rectrices. These markings are mostly white and pronounced in ♂♂, greatly reduced or absent and replaced by buff or tawny in ♀♀, thus forming an important sexual dimorphism (Meyer de Schauensee 1970).

The Blackish Nightjar *Caprimulgus nigriscens* is the darkest coloured of neotropical caprimulgids. Its distribution is restricted to the Amazonian basin (Meyer de Schauensee 1964). Its habitat includes open or rocky places and roads in forests, second growth and savannas, large granite outcrops in rain forest and rocks in mid-stream along rivers (Haverschmidt 1968).

It is a small (length 20 cm) blackish nightjar with rufous spots and mottlings on the dorsal surface and a few whitish spots on the breast. The tail of both sexes is distinctly barred with broad mottled greyish buff transverse bars. Sexual dimorphism is obvious; ♀♀ have no white in tail and wings, but an indistinct white throat band, sometimes broken in the middle, is usually found in both sexes. This paper deals with variations in the white markings of ♂♂ and in the mottled greyish buff tail barring of both sexes.

In field guides on the avifauna of Surinam, Venezuela, Colombia and South America in general, the white pattern of Blackish Nightjar ♂♂ is described respectively as follows:—

'The male has a white spot on the inner web of the third and fourth primaries and white tips to the two penultimate tail-feathers' (Haverschmidt 1968).

'Outer two primaries uniform blackish, next two with white spot on inner web. Outermost tail feathers virtually uniform, next two tipped white' (Meyer de Schauensee 1970).

'... small spots on inner web of inner primaries and narrow tip to second and third outermost tailfeathers white' (Meyer de Schauensee 1964).

'Primaries black with a white spot on the middle of the inner web of the 2nd, 3rd and 4th feather (sometimes indistinct on the 2nd primary). A white tip 0.5 in. (12 mm) wide on both webs of 2nd and 3rd outer rectrix' (Meyer de Schauensee & Phelps 1978). (The numbering of primaries and rectrices is reversed here).

We examined 29 specimens (17 ♂, 12 ♀) in the British Museum (Natural History) (BMNH) and 13 specimens (8 ♂, 5 ♀) in the Rijksmuseum van Natuurlijke Historie (RNH, Leiden) from Surinam (13), British Guiana (now Guyana) (16), Ecuador (5), Peru (2), Brazil (3) and 3 from an unknown locality. In addition to these museum specimens, 9 individuals (7 ♂, 2 ♀) of a population of Blackish Nightjars were mist-netted and examined in April 1980 near Voltzberg (4° 40' N, 56° 11' W) in Surinam. Four (3 ♂, 1 ♀) were juveniles from the earlier February-March 1980 breeding season. Juveniles moult into their first basic or adult plumage within 2–3 months after fledging.

All ♂♂ were examined for form and pattern of the white wing patches and tail tips. In both sexes, tail barring was examined, special attention being given to symmetry of barring on both inner and outer webs, and to the orientation of the bars with regard to the feather shaft. These phenomena were also compared in juvenal and adult specimens since there are differences which allow them to be distinguished.

Blackish Nightjars have 10 primaries (remiges attached to the manus) in each wing and 10 rectrices. We counted both primaries and rectrices from the inside outwards (Snow 1967). Specimens lacking primaries or rectrices or both were not considered.

WING PATCHES

Adults

In adult ♂♂, white patches are found on the 7th, 8th and 9th primaries. They are distributed symmetrically on both left and right wings, and are situated where the outer web broadens, at about 2/5 of the total length of the primary from the tip. The distribution over both webs is given in Table 1. This white 'wing-bar' of Blackish Nightjar ♂♂ is composed sometimes of 3 or 5, but most often of 4, separate patches, respectively in 29, 18 and 53% of the specimens. The 'normal' wing pattern therefore consists of 4 white patches involving the 7th primary's outer and inner web, and the 8th and 9th primaries' inner web only.

Table 1

		Juveniles (N=3)	Adults (N=29)			Juveniles (N=3)	Adults (N=29)
WING PATCHES				TAIL TIPS			
<i>Primaries web</i>				<i>Rectrices web</i>			
9th	outer	—	—	5th	outer	—	—
	inner	—	25 (86%)		inner	—	8 (28%)
8th	outer	—	7 (24%)	4th	outer	3 (100%)	29 (100%)
	inner	3 (100%)	29 (100%)		inner	3 (100%)	29 (100%)
7th	outer	—	26 (90%)	3rd	outer	3 (100%)	29 (100%)
	inner	3 (100%)	29 (100%)		inner	3 (100%)	29 (100%)
				2nd	outer	—	3 (10%)
					inner	—	3 (10%)

Table 1. Details of the white pattern on wings and tail of juvenal and adult ♂♂ Blackish Nightjars *Caprimulgus nigriscens*.

Juveniles

In juvenal ♂♂, small dull white patches are found on the inner web of the 7th and 8th primaries only, not on the 9th primary (Table 1). All primaries have rufous tips.

TAIL TIPS

Adults

In adult ♂♂, the normal white tail pattern is a white tip on both webs of the 3rd and 4th rectrices. A white tip on both webs of the 2nd and on the inner web of the 5th rectrices is present in only 10 and 28% respectively of the specimens (Table 1), and is sometimes smaller than those on the 3rd and 4th rectrices. The white tips are symmetrical, being present on both the left and right side of the tail.

Juveniles

In juvenal ♂♂, dull white tail tips are always present on both webs of the 3rd and 4th rectrices only. This juvenal pattern is identical to the 'normal' pattern of adult ♂♂, except that the white tips are duller and smaller.

Form and size of the (dull) white wing patches and tail tips in (juvenal and) adult ♂♂ are very variable and not well demarcated. At the edges, the white colour is gradually replaced by the normal blackish feather colour. In this transitional area, barbs are blackish and barbules whitish.

Abrasion or wear is no cause of variation in the white tail tips of either juvenal or adult ♂♂ but variation is found in both age groups whether in worn plumage or not.

TAIL BARRING

There is no relevant difference in barring pattern between the sexes; however, there is an obvious difference between juveniles and adults.

In juveniles the rectrices and the bars are narrower, with reduced intensity of the colours and less marbling, and are thus less pronounced than in adults. The general colour impression of the bars is rufous in juveniles and greyish buff in adults.

In both age groups, the number of bars per rectrix is constant, 10 bars per feather, including the marbled distal and proximal ends of the rectrix. In rectrices with a white tip, the white replaces the marbled distal end. The 2-3 bars at the base of the rectrices are narrower than the others, and almost uniformly buffish with little or no marbling. In the outer rectrices all bars are narrower and less marbled.

Barring is most even in the 2 central rectrices, where bars are 3-5 mm broad in juveniles and from 5-7 mm broad in adults. Except for both central rectrices, the bars are broader on the outer webs and the difference between both webs becomes more pronounced in the outer rectrices. In the central rectrices, barring is normally at right angles to the feather shaft and evenly distributed on both inner and outer web. The barring of the central rectrices is symmetrical (apart from the direction of the bars in relation to the shaft) in 79% of all specimens, but in 17 and 4% of the specimens examined, barring is almost symmetrical and completely asymmetrical respectively. The direction of the bars with regard to the feather shaft varies between being at right angles to it and a slight fish-bone pattern, while sometimes a mixture of both patterns is found, one web having the bars at right angles, the other having a fish-bone barring; but the type of barring on each feather is uniform for all rectrices of a given specimen.

The Blackish Nightjar has no subspecies (Peters 1940), and variations in colour patterns are not related to geographical distribution; aberrant patterns are spread randomly throughout specimens, independent of the locality of collecting.

The small possibility that the variation in amount of white in tail and wings is an age-related phenomenon cannot be excluded completely by the above investigations, but it is slight. To show that ♂♂ acquire a more extensive pattern of white tail tips and wing patches when growing older would involve a prolonged and very difficult field study of a population of ringed Blackish Nightjars.

Acknowledgements: We thank I. C. J. Galbraith (BMNH) and Dr G. F. Mees (RNH, Leiden) for allowing the first author to study specimens under their care. We are grateful to the staff of STINASU (Foundation for Nature Preservation in Surinam) for their assistance in the field during April 1980 in Surinam. Dr J. H. Jackson (National Museums and Monuments, Zimbabwe) and Mrs B. T. Thomas (Caracas, Venezuela) contributed useful criticisms and comments on a draft of this paper.

References:

- Haverschmidt, F. 1968. *Birds of Surinam*. Oliver & Boyd: Edinburgh.
 Meyer de Schauensee, R. 1964. *The Birds of Colombia and Adjacent Areas of South and Central America*. Livingston Publishing Cy: Narbeth.
 — 1970. *A Guide to the Birds of South America*. Livingston Publishing Cy: Wynnewood.
 — & Phelps W. H. Jr. 1978 *A Guide to the Birds of Venezuela*. Princeton University Press: Princeton.
 Peters, J. L. 1940. *Check-list of Birds of the World*. Vol. 4. Museum of Comparative Zoology: Cambridge.
 Snow, D. W. 1967. *A Guide to Moults in British Birds*. British Trust for Ornithology: Oxford.
Adresses: Dr. Johan Ingels, Galgenberglaan 9, B-9120 Destelbergen, Belgium. Dr. Jan-Hein Ribot, University of Surinam, Leysweg, Paramaribo, Surinam.

Notes on the birds of Makogai Island, Fiji Islands

by Dick Watling

Received 6 March 1982

Makogai is a 10 km² island in Fiji's Lomaiviti Group (17°26'S, 178°59'E). It lies 30 km northeast of Ovalau, which is 15 km east of Fiji's largest island, Viti Levu; and 12 km north of Wakaya. The island is composed of augite basalt flows and agglomerates which rise to 267 m. Much of it is presently covered by a mature secondary scrub-forest, under which the herb layer is almost non-existent because of the presence of a large population of feral goats. All the flat land and some of the gentler slopes have been planted with coconuts.

Much of the vegetation on Makogai has probably undergone considerable change over the past 2-3 centuries. Old Fijian village sites with large earthworks and stone fortifications are evidence of a large native population in former times, but one which was virtually eradicated in the 1830's (F. Clunie). Since then Makogai has a long record of European settlement. At the beginning of this century there was a thriving sheep station (Turbet 1929) so that there was probably a far more open habitat than there is today. From about 1910 until 1969 there was a Leper Colony with a community of several hundred people. Today there is a small government sheep quarantine station, and potential pasture land is being cleared and put down to grass.

I spent 6 days, 20-25 November 1981 on Makogai and briefly visited the off-shore islet of Makodroga (1 km²). Rollo H. Beck, the principal collector for the Whitney South Sea Expedition, collected birds on Makogai 19-23 October 1924. His journal and the expedition's specimens are deposited in the American Museum of Natural History (AMNH), as is a translation of the original journal in Portuguese of José Correia, who was the expedition's assistant collector at the time although he did not accompany Beck to Makogai. There are also 3 skins (of *Gallicolumba stairii*, *Ptilinopus porphyraceus* and *Halcyon chloris*) in the Cambridge University Zoology Museum collected on Makogai by, or for, Baron von Hügel in 1874 (Watling 1978a). These are the only previous ornithological records related to the island. The list of birds collected by the Whitney Expedition on Makogai has been drawn up from du Pont (1976).

SPECIES RECORDED FOR THE FIRST TIME ON MAKOGAI

Wandering Tattler *Heteroscelus incanus*.

Several dozen were seen on the coastal reefs around Makogai and Makodroga. It is a very common visitor to Fiji during the northern winter and some individuals remain throughout the year.

Collared Lory *Phigys solitarius*.

Common. About 10 were regularly seen feeding on ripe fruits of Mango *Mangifera indica* and Soursop *Annona muricata* around the government station. Small flocks (usually 4-8) and several pairs were seen flying over the forest. One was seen leaving a suspected nest-hole in a rotten branch of a tree in the forest on the top ridge.

White-throated Needletail *Hirundapus caudacutus* (following Collins & Brooke 1976).

Brown & Child (1975) reported it from Vatulele Island, which was the

first record from the Fiji Region of this passage migrant. I saw and photographed 3 from the summit of Makogai on 23 November 1981 as they made long sweeping passes at high speed over the top ridge. There is little chance of mistaken identity, since the only other species with which they might have been confused is the White-rumped Swiftlet *Collocalia spodiopygia*, which is unknown on Makogai.

Red-vented Bulbul *Pycnonotus cafer*.

An introduced bird to Fiji, but not common on Makogai, it was seen in small numbers around 2 parts of the abandoned leper colony and around the government station. The small population possibly indicates a recent arrival or the absence from the island of favoured weed foods, which appear to restrict its range elsewhere in Fiji (Watling 1978b). Of these weeds only *Solanum torvum* is found on Makogai and is not widespread. This bulbul probably reached Makogai from Wakaya where it is very common. Fledglings were seen at the government station.

SPECIES RECORDED BY THE WHITNEY SOUTH SEA EXPEDITION
BUT NOT SEEN DURING THE PRESENT VISIT

Swamp Quail *Synoicus ypsilophorus*. An introduced species to Fiji, which is not recorded as having been liberated on Makogai (Mercer 1964, Watling 1982). The Whitney South Sea Expedition collected a female (AMNH Accession Number 220885). On the islands of Viti Levu and Vanua Levu, the species is rare and restricted to open habitats in the drier leeward sides of the islands. I may have overlooked it on Makogai, but it could have died out. If the latter, competition with Jungle Fowl *Gallus gallus* (an aboriginal introduction) or predation by feral cats may have been responsible.

Banded Rail *Gallirallus philippensis*.

A species not likely to have been overlooked. It was not collected by the Whitney Expedition, but Beck wrote (21 October 1924) "Rails are also detrimental as they go into the chicken houses and eat eggs". It is unlikely that he is referring to any other species of rail found in Fiji. They may have succumbed to the large population of feral cats on Makogai, but this has not occurred on Wakaya, where there are both feral cats and a healthy population of Banded Rail.

Pacific Pigeon *Ducula pacifica*.

A conspicuous and vocal species which is unlikely to have been overlooked. It is a renowned wanderer between small islands and its disappearance could be temporary, or it may have succumbed to shooting by inmates and staff of the former leprosy colony. At the present time the small government community of about 15 families is without firearms. Re-colonisation should certainly take place, since it is common on Wakaya.

Peale's Pigeon *Ducula latrans*.

Again, unlikely to have been overlooked. The Pacific and Peale's Pigeon occur sympatrically on only a few islands in the Fiji Archipelago (Holyoak & Thibault 1978). An island of Makogai's size and topography would be characteristically occupied by the Pacific Pigeon alone. It is more likely that habitat differences rather than the presence or absence of raptors (see Holyoak & Thibault *loc. cit.*) is responsible for the inter-island distribution of these pigeons, especially since their differing gizzard morphology (Beckon 1980) indicates that they must have very different feeding ecologies. Makogai

would appear to be a marginal island for *D. latrans*, but it is close to a colonising source (the large island of Ovalau or Viti Levu) and this species still survives, although uncommonly, on Wakaya. Its disappearance from Makogai is therefore of interest, although it might, like the previous species, have been due to shooting.

Fan-tailed Cuckoo *Cacomantis pyrrhophanus*.

Possibly overlooked during the present visit, as it is a shy, inconspicuous species outside its breeding season and is normally present in low densities. However, it was singing vociferously in west Viti Levu in the 2 months preceding the visit to Makogai and the Vanikoro Broadbill *Myiagra vanikorensis*, the most abundant potential host on the island, was breeding at the time.

White-breasted Woodswallow *Artamus leucorhynchus*.

Beck recorded in his journal (21 October 1924) that he had secured a Woodswallow and saw 3-4 others, indicating that they were not common at the time of his visit. It is a conspicuous species and there is no obvious explanation for its disappearance. Possibly this is temporary, as it occurs in reasonable numbers on Wakaya.

BIRDS RECORDED DURING THE PRESET VISIT AND ALSO BY THE WHITNEY SOUTH SEA EXPEDITION

The Whitney Expedition did not collect several very common species, but their presence on Makogai was noted by Beck in his journal (these species are marked by an asterisk).

*Reef Heron *Egretta sacra*.

Several around the coast, grey and white but no mottled forms observed.

*Jungle Fowl *Gallus gallus*.

Common in the forest, and apparently not affected by the feral cats on the island.

Swamp Harrier *Circus approximans*.

The only raptor observed, 2 or 3 pairs are present.

Crested Tern *Sterna bergii*.

Seen only in small numbers at Dalice. (No seabird breeding colonies were seen on the island and although there appeared to be suitable locations, there were no reports or evidence of nesting petrels.)

White-throated Pigeon *Columba vitiensis*.

Not common, seen on 2 occasions. Its subdued call was heard on both Makogai and Makodroga.

Friendly Ground-dove *Gallicolumba stairii*.

Two pairs were seen on the forested top ridge of Makogai and another 2 pairs on Makodroga.

Many-coloured Fruit-dove *Ptilinopus perousii*.

Heard frequently, but not as common as the following species. An occupied nest with a single squab was found.

Crimson-crowned Fruit-dove *P. porphyraceus*.

Common all over the island, also heard on Makodroga. Two nests were found, one with a single egg and the other with a single squab.

*Spotted Turtle-dove *Streptopelia chinensis*.

Common, especially in the more open areas. A nest with a single squab

was found. It is an introduced bird to the Fiji Islands and has spread quite widely of its own accord. It is abundant on nearby Wakaya I.

*White-collared Kingfisher *Halcyon chloris*. Common.

*Pacific Swallow *Hirundo tabitica*.

Very common over all habitats including forest above the top ridge, also on Makodroga. In the absence of the White-rumped Swiftlet it obviously undergoes considerable niche expansion. An empty nest with recent signs of nestlings was found under a cliff overhang. Other old nests and a dependent young were seen on buildings at the government station.

Fiji Shrikebill *Clytorhynchus vitiensis*.

Seen on several occasions, but more commonly heard.

*Vanikoro Broadbill *Myiagra vanikorensis*.

Common in all habitats and on Makodroga. Two nests were found both with C/2.

Grey-backed White-eye *Zosterops lateralis*.

Small flocks were common in all habitats and on Makodroga.

Orange-breasted Honeyeater *Myzomela jugularis*.

Very common in all habitats, also on Makodroga.

Polynesian Starling *Aplonis tabuensis*.

Common all over the island.

SPECIES MISSING FROM MAKOGAI

Three species, the White-rumped Swiftlet, the Polynesian Triller *Lalage maculosa* and the Wattled Honeyeater *Foulehaio carunculata* were not seen during the present visit or recorded by the Whitney Expedition. They are also absent from Wakaya and were not recorded on the other small islands of the Lomaiviti Group – Nairai and Batiki – by the Whitney Expedition. However, Ramsay (1875) records an immature *Lalage maculosa* from Batiki. Their absence is puzzling, since all are found on many smaller islands elsewhere in Fiji. None of them is apparently particularly specialised in either habitat requirements or feeding behaviour and the Lomaiviti Group can be considered the spatial centre of their range in Fiji. Lack of suitable nesting sites may be a limiting factor for the swiftlet, though there are rock overhangs on Makogai similar to those used elsewhere in Fiji.

Whilst on Makogai, the Whitney Expedition did not collect specimens of several very common species, probably deliberately. They were on the island for most of 5 days, a long visit compared with those to other islands of similar size. The colonial government had restricted the number of each species that could be collected and the expedition probably restricted its collection on some islands so that the quota could be exceeded where larger series were required. The colonial government was under pressure from the planter community, who it is apparent from agricultural records, newspaper articles and anecdotal accounts, were concerned at the apparent absence of insectivorous birds from open habitats and hence from their farms. This absence is real enough, nearly all Fiji's insectivorous species being adapted to forest (Pernetta & Watling 1978). The Whitney Expedition was refused permission to collect birds on some privately owned islands (e.g. Kanacea) and plantations (Correia's Journal, 16–30 June 1924). Pressure from the planter community was almost certainly responsible for the introduction by the Department of Agriculture of the 2 species of mynah *Acridotheres*

tristis and *A. fuscus* which are successfully established on some islands, and the Australian Magpie *Gymnorhina tibicen* established only on Taveuni.

The collection of the Whitney Expedition certainly forms the basis of our present knowledge of the inter-island distribution of birds in Fiji, but as already mentioned, the expedition did not collect every species it encountered on each island. Those birds seen but not collected were noted in Beck's and Correia's Journals for some islands, but many islands have no such list. The entries appear to be haphazard and the identity of certain birds is difficult because of the use of peculiar English names. One inevitably suspects the comprehensiveness of these observations and consequently the use of the Whitney records as the definitive list of the avifauna of Fiji islands in the 1920's.

Acknowledgements: I am grateful to the Director of Agriculture, Fiji Government for permission to visit Makogai and to Ian and Maria Partridge for their hospitality whilst on the island. Fergus Clunie kindly commented on a draft of this note and provided all the information on the birds of Wakaya Island. The help of Mary LeCroy at the American Museum of Natural History (AMNH) and the late Mr. C. W. Benson at the Cambridge University Zoology Museum is much appreciated.

References:

- Beckon, W. N. 1980. Gizzard structure of the Pacific Pigeon *Ducula pacifica*. *Notornis* 27: 302-303.
- Brown, B. & Child, P. 1975. Notes on a field trip to Fiji. *Notornis* 22: 10-22.
- Collins, C. T. & Brooke, R. K. 1976. A review of the swifts of the genus *Hirundapus* (Aves: Apodidae). *Contrib. No. 282; Nat. Hist. Mus. Los Angeles*.
- du Pont, J. E. 1976. *South Pacific Birds*. Del. Mus. Nat. Hist., Monograph No. 3.
- Holyoak, D. T. & Thibault, J. C. 1978. Notes on the phylogeny, distribution and ecology of the frugivorous pigeons in Polynesia. *Emu* 78: 201-206.
- Mercer, R. 1964. *A Guide to Fiji Birds*. Fiji Museum: Suva.
- Pernetta, J. C. & Watling, D. 1978. The native and introduced terrestrial vertebrates of the Fiji Islands. *Pac. Sci.* 32: 223-244.
- Ramsay, E. P. 1875. Remarks on a collection of birds lately received from Fiji, and now forming part of the Macleayan Collection, at Elizabeth Bay; with a list of all species at present known to inhabit the Fiji Islands. *Proc. Linn. Soc. NSW*. 1: 69-80.
- Turbet, C. R. 1929. The Sheep Industry in Fiji. *Fiji J. Agric.* 2 (1): 1-11.
- Watling, D. 1978a. A collection of Fijian and Tongan landbirds. *Bull. Brit. Orn. Club.* 98 (3): 95-98.
- 1978b. Observations on the naturalised distribution of the Red-vented Bulbul in the Pacific, with special reference to the Fiji Islands. *Notornis* 25: 109-117.
- 1982. *The Birds of Fiji, Tonga and Samoa*. Millwood Press: Wellington, New Zealand.

Address: Dick Watling, Box 9216, Nadi Airport P.O., Fiji.

© British Ornithologists' Club 1982.

Taxonomic status of the Timor Cuckoo-shrike *Coracina personata* (Müller)

by Ian J. Mason & John L. McKean

Received 9 March 1982

All modern arrangements (Ripley 1941, Mayr 1944, Voous & van Marle 1949, Peters *et al.* 1960) place *Coracina personata* (Müller) as a race of *C. novaehollandiae* (Gmelin). During field work in Timor (McKean *et al.* 1975) we had the opportunity of observing and collecting *personata* and formed the opinion that the bird was not a race of *novaehollandiae*. Museum material of most of the likely related forms confirmed this and we concluded that, at present, *personata* is best treated as a full species.

A comparison of *C. novaehollandiae* and *C. personata*

Our studies embraced all seasons during 1973-74 and revealed that *personata* frequented rain forests and monsoon scrub, avoiding open areas and eucalypt woodland. *C. novaehollandiae*, on the other hand, preferred eucalypt woodland as it does in Australia. However, the Australian forms of *novaehollandiae*, namely *novaehollandiae*, *melanotis* (= *melanops*) and *subpallida* (Schodde in prep.), as befits their more arid environment, have pale plumage and are nomadic or migratory, the latter 2 forms dispersing to northern Australia and the Lesser Sunda Islands, eastward to the Solomon Islands (Ripley 1941, Peters *et al.* 1960). These forms of *novaehollandiae* are comparatively rare in Timor (as well as the rest of the Lesser Sundas), occurring only as non-breeding (winter) migrants between April and November (cf. Hartert 1904, Hellmayr 1914, Mayr 1944, Mees 1975) – the possibility of *novaehollandiae* and *personata* being sibling species is therefore excluded. On the other hand, evidence suggests that *C. personata* is a sedentary breeding species throughout its range, although it may undertake local movements. Probably in response to its rainforest environment and sedentary habit, it has evolved a dark plumage, more rounded wings (primaries formula: $4 \approx 5$, $5/4 > 3$, $3 > 6$, $2 > 7$) and, compared to *novaehollandiae*, has longer denser facial bristles.

Sexual dimorphism is pronounced in *personata* (♂♂: black extends from forehead through eye to ear coverts and throat; ♀♀: black is reduced to forehead through eye), but is hardly apparent in either Asian or Australian forms of *novaehollandiae*.

C. personata has, proportionally, a much shorter wing (♂♂, ♀♀: 164-174mm, wing/tail ratio 1:23) than *C. novaehollandiae* (10 ♂♂, ♀♀: 185-202mm; wing/tail ratio 1:39). Other plumage characters separating the two include *personata*'s darker more uniform plumage, the black (not white) edging to its underwing coverts, grey rather than white vent and undertail coverts and a black rather than slate grey tail, which is narrowly tipped cream.

The calls of *C. personata* are a series of long monosyllabic piping whistles and are strikingly different from those of *novaehollandiae*, which could best be described as a rolling 'churr' and a more flutey 'keear-keear' given in flight. However, it should be mentioned that our field experience of *novaehollandiae* only extends to the Australasian forms and the race *javensis* in Bali. Ali & Ripley (1971) describe the call of *macei*, the Indian race of *novaehollandiae*, as a long bisyllabic whistle 'tee-tree' which seems equivalent to our flight call 'keear'.

CONCLUSIONS

For the reasons outlined above we feel that *C. personata* ought not to be considered a race of *C. novaehollandiae* and, pending a further revision of this genus, it is best treated as a full species. Its affinities may be with *C. larvata*, which is also rather dark in plumage, exhibits sexual dimorphism (♂♂: black head and throat; ♀♀: crown and throat grey) and is said to emit a long whistling call (cf. Smythies 1960: 359). Voous & van Marle (1949), as well, have commented on the similarities between *personata* and *larvata*. From their and Ripley's (1941) discussions, in context with Mathews' (1930) original taxonomic arrangement, it can be deduced that the 3 species *C. personata*, *schistacea* and *pollens* are probably more closely related than previously thought, in that they have in common a dark slate-grey plumage, large size and robust bills. R. Schodde (pers. comm. and in prep.), in revising the Australian species of *Coracina* for the RAOU 'Checklist of the Birds of Australia', has

concluded independently that the affinities of *personata* may lie with *schistacea*, *pollens* or *larvata* rather than *novaeollandiae*.

Acknowledgements: We acknowledge Dr. R. Schodde's communications to us on this subject.

References:

- Ali, S. & Ripley, S. D. 1971. *Handbook of the Birds of India and Pakistan*. Vol. 6 Oxford University Press; Bombay.
- Hartert, E. 1904. The birds of the South-West Islands Wetter, Roma, Kisser, Letti and Moa. *Novit. Zool.* 11: 174-221.
- Hellmayr, C. E. 1914. De Avifauna von Timor. In C. B. Haniel (Ed.), *Zoologie von Timor*. 1: 1-112.
- Mathews, G. M. 1930. *Systema Avium Australasianarum*. 2: 427-1047.
- Mayr, E. 1944. The Birds of Timor and Sumba. *Bull. Amer. Mus. Nat. Hist.* 83: 123-194.
- McKean, J. L., Mason, I. J. & O'Connor, L. W. 1975. Birds not previously recorded from Timor. *Emu* 75: 62-64.
- Mees, G. F. 1975. A list of the birds known from Roti and adjacent islets (Lesser Sunda islands). *Zool. Meded.* 49: 115-139.
- Peters, J. L., Mayr, E. & Deignan, H. G. 1960. Family Campephagidae (*Coracina*). In *Check-list of Birds of the World*. Vol. 9: 167-221. (Eds. E. Mayr & C. Greenway) Mus. Comp. Zool. Cambridge, Mass.
- Ripley, S. E. 1941. Notes on the genus *Coracina*. *Auk*. 58: 381-395.
- Schodde, R. (in prep.) *Campephagidae*. In RAOU *Checklist of the Birds of Australia*. Song-birds.
- Smythies, B. E. 1960. *The Birds of Borneo*. Oliver and Boyd: London.
- Voous, K. H. & van Marle, J. G. 1949. The distributional history of *Coracina* in the Indo-Australian Archipelago. *Bijdr. Dierk.* 28: 513-529.
- Addresses:* Mason, Ian J., 20 Magnolia Street, Atherton, Qld., 4883, Australia. McKean, John L., Wildlife Research Section, Conservation Commission of the Northern Territory, P.O. Box 38496, Winnellie, N.T., 5789, Australia.

© British Ornithologists' Club 1982.

Natal pterylosis of three Neotropical blackbirds (Icteridae)

by Charles T. Collins and Dennis Minsky

Received 24 March 1982

The natal pterylosis of Neotropical passerine birds has been given increased attention in recent years (Collins 1963, 1973, Collins & Kemp 1976, Collins & Bender 1977a, Ingels 1979). However information is still lacking on many groups, making broad generalizations largely premature. As further data become available, one question which can be addressed is whether or not tropical passerines have a greater or lesser total number of neossoptiles than their temperate zone counterparts. The data presented here on 3 Neotropical blackbirds in the family Icteridae, all of which have Nearctic congeners, permit at least a preliminary comparison to be made.

The species available for this study were the Shiny Cowbird *Molothrus bonariensis*, Carib Grackle *Quiscalus lugubris* and the Yellow-hooded Blackbird *Agelaius icterocephalus*. The single grackle specimen (late Stage A, see Wetherbee 1957: 356) was collected near Arima, St. George County, Trinidad on 13 June 1963. Two specimens (Stage A) of the Yellow-hooded Blackbird and, in the same nest, one cowbird brood parasite were collected near Cacandee Village, Caroni County, Trinidad on 17 August 1964. Two additional cowbirds were collected in Venezuela; one (late Stage A, 3 days old) from a nest of the Pale-breasted Thrush *Turdus leucomelas* in Parque Nacional Henri Pittier, Estado Aragua, on 2 June 1972, the other (Stage A)

from the nest of the White-bearded Flycatcher *Conopias inornata* at Fundo Pecuario Masaguaral, Estado Guárico (Thomas 1979). The latter specimen was contributed by Betsy Trent Thomas; the remainder were collected by the senior author. All these specimens had a moderately heavy covering of neossoptiles ranging in number from a low of 84 to a high of 200 (both in *Molothrus*) and occurring in from 8 to 12 tracts. Neossoptile colour ranged from dark grey in *Quiscalus* and *Molothrus* to pale greyish-white in *Agelaius*. The number of neossoptiles and their distribution are summarized in Table 1.

TABLE 1
Distribution of Neossoptiles in Neotropical blackbirds (Icteridae)

TRACT	MOLOTHRUS BONARIENSIS			QUISCALUS LUGUBRIS		AGELAIUS ICTEROCEPHALUS	
Coronal	18/17 *	9/8	3/1	11/11	10/12	9/11	
Occipital	7/5	3/3	1/1	7/7	4/3	3/3	
Mid-dorsal	8/8	5/5	4/4	10/9	4/5	4/4	
Pelvic (medial)**	11	5	8	13	13	7	
Pelvic (lateral) ...	1/1	0/0	0/0	4/4	1/1	0/1	
Scapular	9/9	6/6	6/6	10/10	8/8	8/8	
Femoral	11/11	10/10	6/6	15/15	10/10	10/10	
Abdominal	5/4	0/0	0/0	0/0	0/0	0/0	
Crural	10/9	1/1	0/0	0/0	3/3	0/0	
Rectrices	6/6	5/5	5/5	6/6	6/6	5/6	
Primaries	4/4	0/0	0/0	4/6	0/0	0/0	
Secondaries	0/0	0/0	0/0	2/2	0/0	0/0	
Greater Secondary Coverts	10/10	8/8	7/7	10/9	8/9	9/9	
Middle Secondary Coverts	8/8	7/7	7/7	7/7	7/7	7/7	
TOTAL	200	112	84	185	138	121	

*Number of neossoptiles on right/left side.

**Unpaired tract on midline; all others paired.

TABLE 2
Average total neossoptile count for congeneric Neotropical and Nearctic Icteridae.

NEOTROPICAL SPECIES A				NEARCTIC SPECIES B			
<i>Quiscalus lugubris</i>	...	...	185	<i>Quiscalus quiscula</i>	...	...	209
<i>Molothrus bonariensis</i>	...	...	132	<i>Molothrus ater</i>	...	...	174
<i>Agelaius icterocephalus</i>	...	...	130	<i>Agelaius phoeniceus</i>	...	...	191

A. This study (Table 1).

B. Wetherbee 1957 (Tables 50, 52-53).

There was appreciable intra-specific variation in the total neossoptile counts of these blackbirds, particularly in *Molothrus*. Part of the variation in *Molothrus* is due to the absence of neossoptiles in the primaries and abdominal tract in 2 of the 3 specimens and in the crural tract of one; abdominal tract neossoptiles were similarly absent in both *Quiscalus* and *Agelaius*. Neossoptiles were present on both primaries and secondaries only in *Quiscalus*. Downs in the pelvic region of the spinal tract occurred in an unpaired medial row in all specimens, although divided into anterior and posterior groups in one specimen of *Molothrus*. In addition, lateral (usually paired) neossoptiles in the

pelvic region were noted in one or more specimens in each of the 3 blackbird genera examined. Such lateral pelvic downs were noted previously for *Paroaria gularis* in the Emberizinae (Collins & Bender 1977b) and *Carpodacus mexicanus* in the Carduelinae (Collins & Bender 1977a), but not for the several species of Nearctic Icteridae examined by Wetherbee (1957). Thus the arrangement of neossophtiles in this region shows some possibly diagnostic patterns which may prove to be of taxonomic importance when additional material becomes available. The single secondary neossophtile originally thought to be diagnostic of *Molothrus ater* (Wetherbee 1957) was not observed in 5 additional specimens (Wetherbee 1958) and was similarly absent in all 3 specimens of *M. bonariensis* examined in this study (Table 1). The minute neossophtiles of the flight feathers were all less than 1 mm long, except for the outermost rectrix, in which it was about 3 mm; mid-dorsal downs were typically about 8 mm long.

The average total number of neossophtiles in the 3 Neotropical blackbirds examined in this study were consistently lower than the corresponding values for their 3 Nearctic congeners (Table 2). This would suggest that neossophtiles serve some additional function, possibly an aid to thermo-regulation, in the species inhabiting higher latitudes and not just the provision of cryptic colouration. Similar data for other pairs of congeneric passerines in other families (Collins, in prep.) seem to provide some necessary support for this conclusion. However, it should be kept in mind that correlations with other variables, for example open or closed nests, have already been noted in the Thraupidae (Collins 1963, Ingels 1979) and *Sporophila* finches (Collins & Kemp 1976). This, and the extensive intra-specific variation noted in the species analysed here, makes generalizations about the total amount of down in Neotropical passerines tentative at present, even in the Icteridae. As additional data become available the functional significance of the amount and distribution of neossophtiles may be further clarified.

Acknowledgements. The specimens utilized in this analysis were collected as part of a continuing programme of study of Neotropical birds supported by research grants from the Frank M. Chapman Memorial Fund of the American Museum of Natural History, New York, and the California State University Long Beach Foundation. We are indebted to Betsy Trent Thomas for contributing a cowbird specimen to this study.

References:

- Collins, C. T. 1963. The natal pterylosis of tanagers. *Bird-Banding* 34: 36-38.
- 1973. The natal pterylosis of the Swallow-tanager. *Bull. Brit. Orn. Cl.* 93: 155-157.
- & Bender, K. E. 1977a. Cervical neossophtiles in a Neotropical passerine. *Bull. Brit. Orn. Cl.* 97: 133-135.
- & — 1977b. The natal pterylosis of the House Finch. *Bull. So. Calif. Acad. Sci.* 76: 209-211.
- & Kemp, M. H. 1976. Natal pterylosis of *Sporophila* finches. *Wilson Bull.* 88: 154-157.
- Ingels, J. 1979. Natal pterylosis of three *Thraupis* tanagers. *Bull. Brit. Orn. Cl.* 99: 12-15.
- Thomas, B. T. 1979. Behavior and breeding of the White-bearded Flycatcher (*Conopias inornata*). *Auk* 96: 767-775.
- Wetherbee, D. K. 1957. Natal plumages and downy pteryloses of passerine birds of North America. *Bull. Am. Mus. Nat. Hist.* 113: 339-436.
- 1958. New descriptions of natal pterylosis of various bird species. *Bird-Banding* 29: 231-236.

Address. Dr. C. T. Collins and D. Minsky, Department of Biology, California State University, Long Beach, California 90840, U.S.A.

The Blue Vanga *Cyanolanius madagascarinus* on Grand Comoro

by M. Louette & M. Herremans

Received 2 April 1982

Until recently, only 2 specimens of the Blue Vanga *Cyanolanius* (= *Leptopterus*) *madagascarinus* had supposedly been collected on Grand Comoro. The first one is the type of *C.m.comorensis* (Shelley), which was taken by Kirk and is now in the British Museum (BMNH) collection, Tring. A second one is mentioned by Milne-Edwards & Oustalet (1888) as having been collected there by Humblot, without any further reference. It is not mentioned in their 1885 and 1887 papers, although Shelley (1912) attributes it to their first publication. It is not even certain that this specimen was ever in the Muséum National d'Histoire Naturelle (MNHN), Paris, where in any case it cannot be traced, despite a recent search by Dr C. Erard, and where it had not been found in 1959 by C. W. Benson and Dr J. Dorst. Nor could it be found either in the Koninklijk Belgisch Instituut voor Natuurwetenschappen (KBIN), Brussels or in the Rijksmuseum van Natuurlijke Historie (RNL), Leiden, 2 other museums holding specimens by Humblot; nor, indeed, among yet further Humblot holdings in the BMNH and the University Museum of Zoology (UMZ), Cambridge (respectively Sharpe 1906: 354, 390, 437; C. W. Benson).

Benson (1960) re-allocated Kirk's specimen to Moheli, because he was unable to find the species on Grand Comoro and found it commonly on Moheli. Indeed, some other "Grand Comoro" allocations by Kirk are certainly erroneous, including the type of *Zosterops maderaspatana comorensis* Shelley from "Grand Comoro", certainly an error for Moheli. However, in June-July 1974, D. A. Turner and A. D. Forbes-Watson (*in litt.*) did, in fact, observe Blue Vangas on Grand Comoro.

On 3 August 1981, Louette had a few glimpses of a bluish bird, hidden among foliage, at a locality known as Malakoff, roughly at 11° 39' 30" S, 43° 19' E on the northern flank of Mount Karthala, at c. 900m a.s.l. Finally, on 15 August 1981, above Mvouni, on the western slopes of Mount Karthala, again at an altitude of 900m, 2 Blue Vangas were seen in a party of birds (including at least also *Coracina cinerea* and *Terpsiphone mutata*) by F. Schoeters and the 2 authors. One of them was collected. The vegetation at both these localities was degraded forest, with underlying banana cultivation. The species must be much less common on Grand Comoro than on Moheli, where Benson found it plentiful; and now that it has been found on both islands with certainty, the question arises as to whether Benson (1960) was correct in re-allocating Kirk's type specimen of *comorensis* to Moheli, and the taxonomy on the species on these 2 islands as well as Madagascar needs reconsidering.

It must first be emphasized that the series collected by Benson on Moheli (*comorensis*), all of which have been re-examined, shows that Moheli birds are quite different from the Madagascar population of the Blue Vanga; so much

This paper was completed with Con Benson's approval before his much lamented death and we are particularly pleased to have acknowledged a man who has done so much to increase scientific knowledge of the birds of the Comoros and elsewhere.

so that it prompts us to describe further differences, in aggregate suggesting that the 2 populations might even belong to different species. Though the colour in males (bright blue above, bright white below) is similar, the females on Moheli and Madagascar are strikingly different; the bill is much longer in Moheli birds, likewise the tarsus (see below), and the proportions are quite different (Benson 1960); and on Moheli the black mask is much more restricted in males and totally absent in females. Other colour differences also are mentioned by Benson, and we would add that Moheli males lack the blue and black "knees" of Madagascar birds (replaced by white). Hartlaub (1877) described this character in the Madagascar bird, but it has not been mentioned in the recent literature to our knowledge. The adult male depicted in Schlegel & Pollen (1868) shows also white feathers above the tarsus, but there is reason to believe that this is a mistake and that the artist had only Madagascar material before him.

Another particularly striking difference between *madagascarinus* and *comorensis* is the proportionate length of the undertail coverts to the length of the rectrices. This can be measured as the distance from the tip of the longest undertail covert to the tip of the longest rectrix, the skin being kept well flattened, though one must allow for possible differences in method of preparation. However, a comparison of a sample of Madagascar Blue Vangas (including 2 ♂♂ prepared by Benson's skinner) and Benson's Moheli birds provides the following figures (in mm):

Madagascar. 7 ♂♂: 30.1 (29.0–31.0); 5 ♀♀: 30.3 (29.0–31.0)

Moheli. 5 ♂♂: 17.0 (15.0–19.0); 5 ♀♀: 19.1 (17.5–23.0)

Our Grand Comoro bird scores 15.5, thus agreeing closely with Moheli birds on this character. Yet another difference between *madagascarinus* and *comorensis* is in the tail pattern. In *comorensis* the proximal three quarters of both inner and outer webs are blue and only the apical quarter is blackish, giving the appearance of a broad dark terminal band; *madagascarinus* in contrast has a greater part of only the outer webs blue, resulting in a somewhat more blackish, less banded pattern. In this feature the Grand Comoro bird again agrees with *comorensis*, the type of which, it must be emphasized, matches in all respects the 5 other males from Moheli.

Unfortunately our Grand Comoro specimen is not in fully adult dress. At the time of skinning it was sexed "? ♀", but it can be assumed to be a male in view of a few bright blue (adult) feathers appearing on the crown and mantle. Furthermore, it had the irides pale blue, as in males of *madagascarinus* and *comorensis*, not brown as in females (Benson 1960; Benson *et al.* 1977). Evidently erroneously, the iris is given as brown in an illustration of the adult ♂ of *comorensis* (Shelley 1900) and blue for both sexes of *madagascarinus* illustrated in Schlegel & Pollen (1868). In view of the striking difference in bill length from *comorensis* (18.5 as against 20.1 mm, see further below), we think Benson (1960) was correct in re-allocating the type of *comorensis* to Moheli. We therefore take great pleasure in naming the Grand Comoro specimen:

***Cyanolanius madagascarinus bensoni* subsp. nov.**

Diagnosis. In bill length intermediate between *C.m.madagascarinus* and *comorensis*; total culmen 18.5 mm as against an average of 17.3 in both sexes of *madagascarinus* and 20.1 mm in both sexes of *comorensis*. Bill decidedly more robust than in *madagascarinus*, although not much longer. In plumage in all

respects seemingly nearest to *comorensis* although there is no similar aged specimen of this race available.

Distribution. Only known from slopes of Mount Karthala, Grand Comoro Island.

Type. Only presently known by the holotype, No. 81-52-A-102 in Koninklijk Museum voor Midden-Afrika, Tervuren, Belgium. From above Mvouni, Grand Comoro, at 11°42'45"S, 43°17'30"E, at approximately 900m a.s.l., 15 August 1981.

Measurements of type (in mm). Wing (chord) 86.5, tail 62.5, total culmen 18.5, tarsus 21.0.

Further material examined (measurements in mm):

C.m. madagascarinus. Many specimens from Madagascar in BMNH, KBIN, MNHN and RNL. Measurements taken from a sample of skins (mounted specimens average shorter in wing and tarsus but agree in bill and tail lengths and distance of rectrices tips to longest undertail coverts): 6 adult ♂♂ (BMNH nos. 1931.8.18.3181, 3191, 3205, 3214 and 1959.5.4555, RNL 6880): 8 adult ♀♀ (BMNH nos. 1931.8.18.3165, 3187, 3204, 3210, 3212; MNHN nos. CG 1932/2386, 2390, 2391). Mean and range: 6 ♂♂, wing 89.6 (87.5-91.0); tail 65.2 (60.0-68.0); total culmen 17.3 (17.0-18.0); tarsus 19.3 (18.5-20.0); 8 ♀♀, wing 88.2 (85.5-91.0); tail 65.1 (62.0-69.0); total culmen 17.3 (16.5-18.0); tarsus 19.7 (18.5-20.5).

C.m. comorensis. 6 ♂♂, 5 ♀♀ (i.e. all the material used by Benson (1960) re-examined, namely the ♂ type plus 2 ♂♂, 3 ♀♀ in BMNH, 3 ♂♂, 2 ♀♀ in MNHN). Our measurements of mean and range are: 6 ♂♂, wing 95.6 (92.0-98.0); tail 65.5 (63.0-68.0); total culmen 20.1 (19.5-20.5); tarsus 22.6 (21.5-23.0); 5 ♀♀, wing 90.9 (86.5-94.5); tail 64.1 (62.0-67.5); total culmen 20.1 (19.0-20.5); tarsus (4 only) 22.1 (21.0-22.5).

Further remarks. The foregoing figures for *madagascarinus* and *comorensis* agree quite closely with those of Benson (1960), although he did not give any for the tarsus.

Apart from the diagnosis of *bensoni*, the following is a fuller description of the holotype (not fully adult):- Upperparts lilac blue, crown somewhat darker, with a few bright blue (adult) feathers appearing on crown and mantle. Inner webs of inner secondaries blue, like outer webs (like *comorensis*, inner webs not black as in *madagascarinus*). Underparts white, a few buffish feathers on flanks. Black mask just starting to appear. Tail feathers with square tips, not pointed as in very young specimens of *Cyanolanius*, and with buffish fringes. Iris pale blue. Legs grey-blue. Bill with pale base to both mandibles, tips dark. One may conclude that *bensoni* agrees well with *comorensis* in plumage characteristics but has a definitely less robust bill, intermediate in size between the 2 other races. Some doubt may persist as to the bill size in the adult, but I have measurements from 4 immatures of *madagascarinus* (mounted) in RNL, certainly somewhat younger than the holotype of *bensoni*, averaging 17.1 (versus 17.3 in the adult, see above) showing that this possible difference is insignificant.

The RNL has a mounted specimen, with no other data but "♂" and "Madagascar", possibly ante-1830, which agrees in most characteristics indeed with an adult ♂ from Madagascar. However, its bill is rather long (18.5mm) but less robust than in the type of *bensoni*. Its underside is washed

buff as in females of *comorensis*. It could possibly originate from still another population.

Acknowledgements. Part of our Grand Comoro work has been financed by the Belgian Fonds voor Kollektief Fundamenteel Onderzoek grant 2.0005.79. We also want to thank C. W. Benson for continuous support, the staff of the BMNH for help during Louette's stay there, which was partly financed by the British Council, and Dr. C. Erard (MNHN), Dr. A. Prigogine (KBIN) and Dr. G. F. Mees (RNL) for a loan of specimens and a search for the still missing specimen collected by Humblot. We also thank Dr. J. F. Monk for assistance in the finalisation of our manuscript.

References:

- Benson, C. W. 1960. The birds of the Comoro Islands. *Ibis* 103b: 5-106.
 Benson, C. W., Colebrook-Robjent, J. F. & Williams, A. 1977. Contribution à l'ornithologie de Madagascar (Suite). *L'Oiseau et R.F.O.* 47: 41-64.
 Hartlaub, G. 1877. *Die Vögel Madagascars*. Halle: H. W. Schmidt.
 Milne-Edwards, A. & Oustalet, E. 1885. Observations sur la faune de la Grande Comore. *Compt. Rend. Acad. Sci.* 101: 218-222.
 — 1887. Observations sur quelques espèces d'oiseaux récemment découvertes dans l'île de la Grande Comore. *Ann. Sci. Nat. Zool.* (7) 2: 209-238.
 — 1888. Etude sur les Mammifères et les Oiseaux des îles Comores. *Now. Arch. Mus.* (2) 10: 219-297.
 Schlegel, H. & Pollen, F. P. L. 1868. *Recherches sur la Faune de Madagascar et de ses Dépendances. 2^e Partie. Mammifères et Oiseaux*. Leiden: J. K. Steenhoff.
 Sharpe, R. B. 1906 *The History of the Collections contained in the Natural History Departments of the British Museum*. Vol. 2: 79-515. London: British Museum.
 Shelley, G. E. 1900. *The Birds of Africa*. Vol. 2. London: R. H. Porter.
 — 1912. *The Birds of Africa*. Vol. 5 (2). London: H. Sotheman & Co.
 Address. Dr. M. Louette & M. Herremans, Koninklijk Museum voor Midden-Afrika, B-1980 Tervuren, Belgium.
 © British Ornithologists' Club 1982.

Nesting of the Lappet-faced Vulture *Torgus tracheliotus* in Oman

by M. D. Gallagher

Received 25 April 1982

The status of the Lappet-faced Vulture *Torgus tracheliotus* in the Arabian Peninsula has for long been obscure. The bird's main base is in Africa, where it has declined markedly in the north (Cramp & Simmons 1980). In Israel the large breeding population discovered by Professor H. Mendelssohn in 1954 had declined to about 3 nesting pairs in 1980 (Bruun 1980, 1981 and Y. Leshem), and only 2 in 1981/82 (H. Mendelssohn *in litt.* to Dr B. Bruun).

Meinertzhagen (1954) had no reports from the Arabian Peninsula, but I found one dead between Aden and Little Aden on 3 March 1962; in North Yemen it has been seen in December (Thiollay & Duhautois 1976); in Saudi Arabia, where there is now a record of nesting in central Arabia in 1947 and where it may still breed (Jennings 1982), it is a rare winter visitor to northern Hejaz and central Arabia (Jennings 1981); in the United Arab Emirates there are 5 records of these vultures in November and January (Bundy & Warr 1980).

In Oman, its status has been partly obscured by confusion with other species, and searching for the birds in the mountains is difficult. It is certainly a winter visitor, and though a small resident population has been suspected (Gallagher 1977) this has not been proved until now.

Nesting in Oman

An occupied nest was reported to me by Major J. E. G. Vivian on 16 February 1982. It was situated on a tree at 1440 m a.s.l. on the flank of a valley in the southern part of Jabal Akhdar (Al Jabal Al-Akhdar, the Green Mountain), 120 km SW of Muscat. I found no bird present between 15.00 and 17.00 that day, though one single and 3 others together soared briefly into view far away. I was able to photograph the nest without disturbance to the bird; it contained one warm dull white, brown-spotted egg. Barely 300 m away, the activity and noise of the drilling and blasting of roadworks must have caused some disturbance to the bird, but workers said it had not deserted the nest. At 17.00 one bird returned and settled on the egg, only to leave hurriedly minutes later at the next explosion. I returned early 3 days later (Friday 19 February, a day of rest from roadworks), and found a bird sitting closely. I watched and photographed it from a hide on the mountain-side about 120 m away. The sky was overcast, but the bird began to pant at 11.30 and it flew at 11.50 on the first of several alternate periods of soaring and incubating during the day. I saw no second bird.

By 11 March, when the roadworks were by now 1 km away, the bird had deserted the nest, perhaps because of embryonic death caused by exposure, either during enforced absences of the parent(s), or during recent unusually heavy rainstorms. The date of desertion cannot be established, but Major Vivian did not see it on the nest early on 21 February, nor subsequently. On 24 March I removed the cold, faded egg, which measures 95 x 72.6 mm, weighed 244 g and contained a well-formed, half-grown embryo, now preserved in spirit.

Although the nest is a large structure, it is built into the uneven crown of an isolated and small (3.45 m high) *but* tree *Monothea buxifolia* (formerly *Reptonia mascatensis*) (Sapotaceae), and it is practically invisible except from above. The nest is bowl-shaped, slightly tilted to the north, longest in its north-south axis (the alignment of the valley and of the prevailing winds), with exterior length 2.14 m, interior length 1.25 m, and interior depth 0.26 m. Constructed of stout sticks, maximum diameter 25 mm, the inner walls and part of the level floor were lined during occupancy with fresh sprigs of *Euphorbia larica*, herbs and grasses. The central pad of the nest, length 0.48 m, was (on 16 February) lined with soft balls of regurgitated donkey hair, and (on desertion) by tufts of the grass *Cymbopogon* sp. Three flight feathers were found in March, pressed amongst the sticks of the nest; a fourth lay below the nest as if recently moulted.

In addition to the nest reported above, I have been given reports of very large tree-top nests of vultures (Arabic: *nizr*) in 3 other locations on Jabal Akhdar, one of which I saw from the cliff high above to have been unoccupied on 16 May. My friends and I have been unable to visit these during the likely breeding season in winter and early spring. There are also reports of large nests on trees on the gravel plains of northern Oman, mostly attributed (presumably wrongly) to Griffon Vulture *Gyps fulvus*, which is usually a colonial cliff-nester (Cramp & Simmons 1980) and they may in fact have belonged to the Lappet-faced Vulture. Two photographs of one such nest in 1962 or 1963 by H. E. Ennion show a Lappet-faced Vulture standing upon and then flying from it. Ennion told me that the nest contained 2 large young in white down. However, as the Lappet-faced Vulture's clutch is

invariably one (H. Mendelssohn), the possibility is that it was a deserted nest of the Golden Eagle *Aquila chrysaetos* (the breeding of which is reported in Gallagher & Brown 1982) at which the vulture was about to feed.

On 4 April 1981 I saw Lappet-faced Vultures in the zoo at Al Ain, Abu Dhabi, United Arab Emirates, near Buraimi, Oman, which were said to have been brought in when young. Dr Ghassan Ramadan-Jaradi also told Dr Bruun and me that wild Lappet-faced Vultures visit the zoo daily to feed on carrion put out for the zoo animals. There is a strong possibility that these vultures breed locally, probably on Jabal Hafit which straddles the border with Oman; if correct, this would add Jabal Hafit to the nesting localities in northern Oman.

I have more recently been shown photographs of a young Lappet-faced Vulture taken by R. Candlish in 1970. This had been brought to him when very small, from a nest on a tree in the mountains near Saiq, Jabal Akhdar, and raised until nearly fledged. This must constitute the first proof of breeding in Oman. The breeding season in Oman remains to be confirmed. Candlish cannot now recall the month in which he received his bird. If the incubation period is about 55 days, the size of the embryo in the egg of the 1982 nest would indicate that it was laid in January and would have hatched in March. However, other birds, nesting at lower altitudes, may lay earlier.

Identification

Field identification characters of the Lappet-faced Vulture in Oman include the following:- *Head and neck*: distinctly whitish, covered with white down (a bird in Al-Ain zoo and over 10 years old still retains this down), the skin showing pink on the bare face and through the down only in some lights and when excited; *lappets*: whitish, reduced to a small fold of skin from ear to foreneck and slight wrinkles on the nape; *upper-parts*: the brown mantle contrasts with blackish flight-feathers, though this is not so pronounced as in the Griffon Vulture; *under-wing*: the brown linings have irregular white spots where down is exposed, giving rise to reports of Rüppell's Vulture; a pale streak near the forewing is faint or absent, another streak of white down lies along the base of the flight-feathers; *under-body*: well covered by the long lanceolate feathers, the flanks in some birds showing whitish; *feet*: the 'trousers' are medium to dark brown, sometimes ending in white near the bare lower part of the tarsi, which appear whitish like the toes; *in soaring flight*: the wings are sometimes slightly bowed, as in the Griffon Vulture.

Subspecies

A study of the photographs and descriptions of live Lappet-faced Vultures in Oman and those in the Al Ain zoo has been made by Dr. Bruun, who has kindly offered the following comments: down on the head of the Oman birds persists into adulthood, a characteristic of *negevensis*, but not of *nubicus*; on the other hand, the size of the lappets of the Oman birds is greater than those of *negevensis*, although perhaps not quite so large as in *nubicus*; the pink colouration (of some Oman birds, in some situations) is brighter than in *negevensis* and almost as bright as in *nubicus* and the thighs are dark as in *negevensis*, although this can be the case in *nubicus*. Thus the Oman birds do not fully conform with the published descriptions either of *negevensis* or of *nubicus*, but appear to be intermediate. This could indicate

either that the Oman birds belong to a separate subspecies, or more likely that there is a cline across Arabia from the northeast African form, *nubicus*, to *negevensis*, with decreasing red colouration of the skin and increasing uniform brown plumage. Dr. Brunn now favours the latter theory, a view shared by the present author.

Status of vultures in Oman

The Lappet-faced Vulture in eastern Arabia has often been confused with the Griffon Vulture, the Rüppell's Vulture *G. rueppellii* and the Black Vulture *Aegyptius monachus*, particularly in distant views, and the many previously unconfirmed records have bedevilled accurate assessment of the status of all 4 species in the whole region. Furthermore, Brunn (1981 and *in litt.*) has suggested that the Indian Black Vulture *Sarcogyps calvus* may possibly occur in Oman, although I have no evidence for this.

My close observations and photographs of large vultures in Oman since June 1979, and the publication of comparative descriptions of 3 subspecies of *T. tracheliotus* (Brunn 1980, 1981; Brunn *et al.* 1981) make it certain that the birds which nest on Jabal Akhdar, northern Oman, are of this species, but not of the nominate subspecies (see above). In addition, a re-assessment of observers' reports of large vultures in Oman since 1961 has now been made possible, in some cases with photographic evidence of Lappet-faced and Black Vultures becoming available for the first time; some records, however, remain unconfirmed.

The status of the 4 species in Oman now appears to be as follows, though further evidence is desirable:—

LAPPET-FACED VULTURE *Torgos tracheliotus*. Winter visitor between August and April. Breeding resident in some northern mountains and foothills; probably also in or near the Dhofar mountains in the south, where individuals have been reported in every month except May and September–December, and pairs in January, March, June and July.

GRIFFON VULTURE *Gyps fulvus*. Of uncertain occurrence in the north, but perhaps a very scarce winter visitor there, as in the south.

RÜPPELL'S VULTURE *Gyps rueppellii*. No certain records. Not to be expected, except in the south. (There are records in southwest Arabia – see Meinertzhagen 1954, Jennings 1981.)

BLACK VULTURE *Aegyptius monachus*. Very scarce winter visitor to north and south; one was killed on Masirah Island on 7 December 1977 (J. P. Ross).

Threats and conservation

The accurate assessment of the size of the resident populations of *Torgos tracheliotus* in northern and southern Oman is difficult because the species appears to live mainly in mountainous country, but numbers are probably very small. Although groups of up to 12 birds have been seen at carrion on the plains in winter, at other times they are seen only occasionally in or near the mountains and usually only singly or in pairs, rarely 4 at once. Contact with humans occurs when birds visit water and village rubbish tips and when the vultures nest or come to carrion near the increasingly used and expanded network of tracks and roads. Although many villagers on Jabal Akhdar know of its presence, there appears to be no enmity against it. However, there are dangers: the 1970 and Al Ain birds were removed from their nests, an adult was reported shot in January 1982, another was killed

by traffic near Ibri as long ago as 1962, and there has been a report that poisoned bait is occasionally used against the Wolf *Canis lupus arabs*.

Even if recruits to the very small resident populations may be obtained from amongst the winter visitors, the pressure upon the resident birds by occasional persecution or accident means that they may now be under threat of extinction. It is hoped that the promotion of more public awareness of the beneficial habits of vultures will help alleviate this pressure.

Acknowledgements. I am indebted to the Government of Oman for facilities, and to Major M. StC. Baddeley, Dr B. Bruun, R. Candlish, H. E. Ennion, Dr Ghassan Ramadan-Jaradi, M. C. Jennings, Chief Supt. & Mrs J. K. Lawrence, Y. Leshem, D. P. Mallon, Professor H. Mendelssohn, Dr J. P. Ross, P. A. Smith, Major J. E. G. Vivian and P. G. Walker for their co-operation, and to those others who have contributed their observations to the Oman records begun and maintained until 1981 by Mrs F. E. Warr.

References:

- Bruun, B. 1980. The Lappet-faced Vulture *Torgos tracheliotus* revisited. *Vulture News* 4: 3-6.
 — 1981. The Lappet-faced Vulture in the Middle East. *Sandgrouse* 2: 91-95.
 Bruun, B., Mendelssohn, H. & Bull, J. 1981. A new subspecies of Lappet-faced Vulture *Torgos tracheliotus* from the Negev Desert, Israel. *Bull. Brit. Orn. Cl.* 101: 244-247.
 Bundy, G. & Warr, E. 1980. A check-list of the birds of the Arabian Gulf states. *Sandgrouse* 1: 4-49.
 Cramp, S. & Simmons, K. E. L. (eds.). 1980. *The Birds of the Western Palearctic*. Vol. 2. Oxford: OUP.
 Gallagher, M. D. 1977. Birds of Jabal Akhdar. In *The Scientific Results of the Oman Flora & Fauna Survey 1975*. *J. Oman Stud. Spec. Rep.* 1: 27-58.
 Gallagher, M. D. & Brown, M. R. 1982. Golden Eagle *Aquila chrysaetos* breeding in Oman, eastern Arabia. *Bull. Brit. Orn. Cl.* 102: 41-42.
 Jennings, M. C. 1981. *The Birds of Saudi Arabia: a Check-list*. Cambridge: Privately printed.
 — 1982. A breeding record of the Lappet-faced Vulture from Arabia. *Sandgrouse* 4: (in press).
 Meinertzhagen, R. 1954. *Birds of Arabia*. Edinburgh & London: Oliver & Boyd.
 Thiollay, J. M. & Duhautois, L. 1976. Notes sur les oiseaux du Nord Yemen. *Oiseau R. F.O.* 46(3): 261-271.

Address: M. D. Gallagher, Oman Natural History Museum, Ministry of National Heritage & Culture, P.O. Box 668, Muscat, Sultanate of Oman.

© British Ornithologists' Club 1982.

Nigeria, a new wintering area for the Little Crake

Porzana parva

by R. Wilkinson, R. Beecroft and D. J. Aidley

Received 9 May 1982

The Little Crake *Porzana parva* breeds in the western Palearctic, mostly in central and eastern Europe, Egypt and Algeria. The normal wintering range of those birds breeding in the western Palearctic is the Mediterranean basin, northeast and east Africa (south to the equator in Kenya and Uganda), possibly Arabia, Iraq and Iran (Cramp & Simmons 1980). Its non-breeding range in northeast Africa is the Sudan, Abyssinia and Uganda (Mackworth-Praed & Grant 1957). Moreau (1972) notes that, with the exception of Senegal, *P. parva* has not been recorded in Africa west of the Sudan, so that its absence "from the intervening area must be delusive in view of their passage through Maghreb and Libya", an opinion shared by Mackworth-Praed & Grant (1970), who noted one specimen from Senegal but considered that *P. parva* "is extremely likely to occur elsewhere" in West Africa. The observations reported below fully confirm these authors'

suspicions and indicate a newly discovered wintering area over 1500 km west of the Sudan and some 2500 km east of Senegal, in Nigeria. The record is an additional species for *The Birds of Nigeria* (Elgood 1982).

From October 1981 until April 1982 a series of regular evening and morning visits, normally at 10-day intervals, were made to Jekara dam (12° 40' N, 8° 10' E), c. 30 km ENE of Kano, Nigeria. Between the reservoir and the nearby irrigated and cultivated land are fairly extensive areas of swampy ground dominated by bullrushes (*Typha*). Whilst mist-netting in these rushes, one or more small brownish unidentified crakes were seen running through the clearings made for the nets on 1, 2 and 12 December 1981. It was not until 13 December that of at least 3 individuals observed, one was conclusively identified as an adult male Little Crake and another as an adult female.

The following field notes were made at the time: "Small crake, much smaller than the Black Crake *Limnecorax flavirostra* seen beside it. Very dark brown/black on shoulders (scapulars) and centre of back; white flecks forming lines along top of shoulders and centre of back. Dark crown. Grey below with pale underchin and throat; flanks obscurely barred black and white, undertail coverts clearly barred black and white. Legs green; short bill green with red spot at base. A second individual similar to above but buffish below rather than slate grey". The green legs and red spot at the base of the bill differentiate the Little Crake from the otherwise similar Baillon's Crake *P. pusilla* and the barred undertail coverts separate it from the Spotted Crake *P. porzana*. An adult female Little Crake subsequently photographed by Roger Beecroft uncompromisingly confirm our field identification.

The crakes were not shy, but, despite their frequenting the area around our mist nets and later attempts to catch them with locally crafted leg snares, we failed to secure a specimen. They were last seen at this site on 20 December. By then the area was progressively becoming drier and though we continued to examine the area and to operate near it, we saw no more of the birds, despite the fact that we had seen them on 5 consecutive visits up to 20 December. All 15 individual Little Crakes which have occurred in Senegal were recorded between late September and November, including the single specimen obtained (Morel & Roux 1966), the latest record being 20 November 1958. Taken together, these observations suggest that Little Crakes may be itinerant winter visitors, spending only the first part of the dry season in West Africa.

References:

- Cramp, S. & Simmons, K. E. L. 1980. *The Birds of the Western Palearctic*. Vol. 2. Oxford University Press: Oxford.
- Elgood, J. H. 1982. *The Birds of Nigeria*. British Ornithologists' Union: c/o Zoological Society, Regent's Park, London NW1 4RY.
- Mackworth-Praed, C. W. & Grant, C. H. B. 1957. *African Handbook of Birds. Eastern and North Eastern Africa*. Vol. I. 1970. *West Central and Western Africa*. Vol. I. Longmans: London.
- Morel, G. & Roux, F. 1966. Les migrateurs Palearctiques au Senegal. I. Non Passereaux. *La Terre et la Vie*, 20: 19-72.
- Moreau, R. E. 1972. *The Palearctic-African Bird Migration Systems*. Academic Press: London.
- Addresses. Dr. R. Wilkinson, Dept. of Biological Sciences, Bayero University, P. M. B. 3011, Kano, Nigeria. R. Beecroft, Anadariya Farms Ltd. P.O. Box 2826, Tiga, Kano State, Nigeria. Dr. D. J. Aidley, Dept. of Biological Sciences, University of East Anglia, Norwich, U.K.

Sympatry of Common Cranes *Grus grus* with larger cranes in the last c. 125,000 years

by *E. Marjorie Northcote*

Received 21 May 1982

Common Cranes *Grus grus* do not frequent Malta (Cramp & Simmons 1980), but they did so in the last Interglacial (c. 125,000 years ago) (Northcote 1982a). I have prepared the proximal part of a tarsometatarsus and the distal part of a tibiotarsus of *Grus grus* from a deposit, which is of that age, from Mnajdra, Malta (University Museum of Cambridge, No. 252a). I also found there remains of the extinct Maltese Crane *G. melitensis*, which was the size of the present largest living crane, the Sarus Crane *G. antigone* (Northcote 1982b). The Common Crane weighs c.6kg (Cramp & Simmons 1980); the Sarus Crane weighs c.8kg (Jerdon 1877). The Common Crane and the Maltese Crane were evidently sympatric. Subsequently also, in the Glacial, the Neolithic and the Iron Age a Sarus-sized crane was sympatric with the Common Crane elsewhere in Europe (Table 1). In each case the larger crane became extinct, whereas its smaller congener survived.

TABLE 1

Sympatry of Common Crane *Grus grus* with larger cranes in the Glacial, Neolithic and Iron Age

GLACIAL	NEOLITHIC	IRON AGE	
S.W. France (Dordogne)	W. Germany (Ulm)	Scotland (Strathclyde)	England (Somerset)
Common Crane (Mourer-Chauviré 1975); larger crane (Mourer- Chauviré <i>et al.</i> 1975)	Common Crane and larger crane (Soergel 1955)	Common Crane (Ritchie 1970-71); larger crane (Harrison & Cowles 1977)	Common Crane (Andrews 1899, Gray 1966); larger crane (Harrison & Cowles 1977)

Note. The larger crane has been attributed either to *G. primigenia* Milne-Edwards or to the Sarus Crane *G. antigone* or to both.

Large birds that migrate long distances evolve adaptations such as elaborate soaring techniques (Pennycuik *et al.* 1979). Big birds that do not evolve such adaptations have a more restricted flying range and as a consequence may develop specialisations for exploiting their immediate environment, thus making them vulnerable to rapid local environmental changes. Migratory birds are less vulnerable to such changes.

At the end of the Interglacial there was a climatic change which was quite rapid (Starkel 1977) and the abundant food resources on Malta (Northcote 1982a) would have become depleted. Common Cranes have rather catholic feeding habits and have evolved adaptations for migrating long distances in search of food and breeding grounds whereby, probably, they survived the change. On the other hand, Maltese Cranes seem to have been more specialised (Northcote 1982b) and, having probably not evolved migratory habits, were unable to adapt and became extinct. There may be a similar explanation for why, later on in Europe, the Common Crane survived in preference to its larger sympatric congener.

In northern India, the Sarus Crane is sympatric with the Common Crane, the former being an accomplished flier, but habitually non-migratory (Walkinshaw 1973). Though, at present, both species are common in that

region, analogy with sympatric paired crane species of the last c.125,000 years suggests that in conditions of rapid change the Sarus Crane may be more vulnerable than the Common Crane.

Acknowledgements. I wish to thank Dr. K. A. Joysey and Mr. R. D. Norman of the University Museum of Zoology, Cambridge for their help.

References:

- Andrews, C. W. 1899. On some remains of birds from the lake-dwellings of Glastonbury, Somerset. *Ibis* 5: 351-358.
- Cramp, S. & Simmons, K. E. L. (eds.) 1980. *The Birds of the Western Palearctic*, Vol. 2. Oxford University Press.
- Gray, St. G. H. 1966. *The Meare Lake Village*. (Ed. M. A. Cotton). Taunton: Hammett.
- Harrison, C. J. O. & Cowles, G. S. 1977. The extinct large cranes of the north-west Palearctic. *J. Arch. Sci.* 4: 25-27.
- Jerdon, T. C. 1877. *The Birds of India*. Vol. 2. Calcutta: P. S. D' Rozario & Co.
- Mourer-Chauviré, C. 1975. Les oiseaux du Pléistocène moyen et supérieur de France. *Docum. Labo. Geol. Fac. Sci. Lyon* 64.
- Mourer-Chauviré, C., Adrover, R. & Pons, J. 1975. Présence de *Grus antigone* (L.) dans l' 'Avenç de Na Corna' a Majorque (Espagne). *Nouv. Arch. Mus. Hist. Nat. Lyon* 13: 45-50.
- Northcote, E. M. 1982a. Size, form and habit of the extinct Maltese Swan *Cygnus falconeri*. *Ibis* 124: 148-159.
- Northcote, E. M. 1982b. The extinct Maltese Crane *Grus melitensis*. *Ibis* 124: 76-80.
- Pennycuik, C. J., Alerstam, T. & Larsson, B. 1979. Soaring migration of the Common Crane *Grus grus* observed by radar and from an aircraft. *Orn. Scandinav.* 10: 241-251.
- Ritchie, J. N. G. 1970-71. Iron Age finds from Dùn an Fheurain, Gallanach, Argyll. *Proc. Soc. Antiq. Scotland* 103: 100-112.
- Soergel, E. 1955. Über einige Vogelreste (Seeadler, Kraniche) aus dem Neolitikum von Erhenstein bei Ulm. *J. Ver. Vaterl. Naturk. Württ., Stuttgart* 110: 121-124.
- Starkel, L. 1977. The palaeogeography of mid- and east Europe during the last cold stage, with west European comparisons. *Phil. Trans. Roy. Soc. Ser. B.* 280: 351-372.
- Walkinshaw, L. 1973. *Cranes of the World*. New York: Winchester.

Address. Dr. E. Marjorie Northcote, Dept. of Zoology, Downing Street, Cambridge CB2 3EJ.

©British Ornithologists' Club 1982

On the status of *Lybius (minor) macclounii**

by L. L. Short

Received 17 June 1982

The Black-backed Barbet *Lybius minor* is variously held to include (Traylor 1963, Goodwin 1964, Benson *et al.* 1970, Goodwin & Clancey 1978) or exclude (Ripley & Heinrich 1966, Dowsett & Dowsett-Lemaire 1980), Macclounie's Barbet *Lybius (minor) macclounii*. Nominate *L. m. minor* (Cuvier) occupies Gabon, Cabinda, the lower Congo river region of Zaire and northern and northwestern Angola, and *L. minor macclounii* (Shelley) occurs from northern and eastern Angola through southern Zaire and northern Zambia to Barundi, western Tanzania and northwestern Malawi (see map 345 in Goodwin & Clancey 1978). An additional race *L. minor intercedens* (Neumann) with a type locality at Manyanga (Manianga, near the border with Congo-Brazzaville), Zaire, has been merged into *L. m. minor* (White 1965), treated

*Dedicated to the memory of C. W. Benson, whose contributions to African ornithology are legion.

as a race of *L. macclounii* (Ripley & Heinrich 1966), or considered inter-gradient between *minor* and *macclounii* (Traylor 1960, Bouet 1961, Goodwin 1964).

There has been considerable discussion of the status of these forms, and indeed they require study, particularly in the field, to determine their relations precisely. Nevertheless, some remarks are necessary and can be made from existing material. The 2 major sources of taxonomic information are Traylor (1960) and Ripley & Heinrich (1966). Traylor of course did not have available the Ripley & Heinrich specimens; but the latter, although they examined specimens from one locality which was also represented in the material Traylor used at the Field Museum of Natural History (collected, indeed, by Heinrich a few years before the material on which Ripley & Heinrich based their statements), they failed to borrow the Field Museum specimens for comparison.

I have obtained critical material on loan through the gracious assistance of the curators of the Field Museum of Natural History (FMNH), Yale University's Peabody Museum of Natural History (YPM), the British Museum (Natural History) (BMNH), and the Belgian Royal Museum of Central Africa, Tervuren (RMCA). Additional specimens have been available in the American Museum of Natural History (AMNH) and the National Museums of Kenya, Nairobi; and Peter Colson, on my instructions kindly checked material in the BMNH not actually at hand for my comparisons—the BMNH material is extensive, but the crucial areas of possible contact are unrepresented (see Benson *et al.* 1970: 21).

COMPARISONS OF *minor* AND *macclounii*

The available material for the comparisons included: 20 *L. minor minor*; 2 atypical, dark *minor*; 8 "*intercedens*"; 8 specimens likely to represent *minor* x *macclounii*; and 28 *L. minor macclounii*. An additional sample of *macclounii* is that of Verheyen's (1953) Upemba, Zaire, birds—he provided wing lengths of 31 specimens, and weights of 17. P. Colson examined the 6 BMNH specimens of *minor*, and its 24 *macclounii*, finding them typical of these forms in all colour features, as had Benson *et al.* (1970).

The differences between *minor* and *macclounii* must be evaluated with due regard for their similar structural features, proportions and colour patterning involving a blackish dorsum, white ventrum, red crown patch, pink abdominal patch, black thighs, and black areas at the base of the mandible, of the maxilla and on the chin. The major differences in colour are the grey-brown hindcrown to upper back, grey-brown face, plain blackish brown upperparts and dusky underwings and bend of the wing in *minor*, compared with the black hindcrown to tail, white face and posterior superciliary area, a white line on either side from the upper back and scapular region converging posteriorly to meet on the lower back and white underwings and bend of the wing in *macclounii*. Juveniles of *minor* are coloured as adults, duller in tone but differing only in the lack of red on the forecrown and forehead, and duller pink on the abdomen. An immature of *macclounii* with red feathers coming in on the forecrown is otherwise precisely patterned as adults of that form, even having a pink abdomen, although Verheyen (1953) noted the abdomen of young *macclounii* as being citron yellow. Ripley & Heinrich (1966: 8) stated that the crown patch of *minor* is "cerise-red" in males and "orange" in females. There is in fact no such indication in the material at

hand, and Benson *et al.* (1970: 22) found the sexes alike, and, as well, *macclounii* and *minor* alike in colour of the crown patch, after examining 6 *minor* and 62 *macclounii*. A few specimens have some orange evident in the crown's red, but these are males, and the orange seems to reflect an individual variation, often found in red colouration.

Ripley & Heinrich (1966: 8) contrasted *minor* and *macclounii* as differing in eye colour (respectively "yellowish red" and "reddish brown") and in colour of feet and legs (respectively "lilac" or "purplish brown" and "pink"). Iris colour in adult specimens of *minor* at hand, including some carefully prepared by Chapin, range from "red-brown" (n=2) and "orange-red" (5) to "pinkish brown" (1), "light yellow-brown" (2) and "brownish yellow" (1), and Bouet (1961) described the eyes of *minor* as being red with a red-orange inner border. Adults of *macclounii* have the iris stated as "red" (2), "reddish brown" (1) and "reddish orange". Mackworth-Praed & Grant (1962, 1970) give the eye colour of *minor* as "orange-red" and *macclounii* as "red" or "reddish". I conclude that there is little or no difference in colour of the iris between them.

The colour of the legs in *minor* is stated by Mackworth-Praed & Grant as "pinkish brown", and of *macclounii* as "purplish" (1962) or "grey" (1970). The few data for leg colour of *macclounii* that I have indicate "light-red" (2) and "pink" as the colour. For *minor* there are "pink" (2), "pinkish flesh" (3), "flesh" (2), "purplish brown" (1), "pinkish brown" (1), and "brownish red" (1). The variation in *minor* is such as to preclude assigning significance to any difference, although some *minor* may prove to have darker (brownier or greyer) legs than do most *macclounii*.

TABLE I
Summary of measurements (mm) of *Lybius minor* and *L. 'macclounii'*

	<i>Lybius minor</i>		<i>Lybius macclounii</i>	
	Males (n=11-12)	Females (n=7-8)	Males (n=11-13)	Females (n=12-14)
	Range Mean	Range Mean	Range Mean	Range Mean
Wing length	85-94 (90.9)	86-94 (91.0)	84-91 (86.8)	86-90 (87.9)
Tail length	65-75 (69.7)	65-76 (71.3)	65-71 (66.5)	63-73 (67.6)
Bill length	20.1-23.8 (22.0)	20.9-22.5 (21.9)	20.0-22.6 (21.1)	19.2-23.8 (20.9)
Tarsal length	21.5-23.4 (22.5)	20.8-22.7 (21.8)	19.5-22.1 (21.0)	20.2-22.2 (21.1)

Size variation in *minor* and *macclounii* is summarized in Table 1. Although *minor* is largest in all 4 mensural characters, there is considerable overlap in all measurements; indeed the average difference is only of the order of 3-4%, well below the 10% that I deem satisfactory for separating subspecies. As might be expected, "intergrade" specimens show measurements from throughout the range of the 2 forms, and the measurements are of no help in determining the status of individual specimens.

EVIDENCE FOR INTERBREEDING

I have omitted from the above comparisons the taxon *intercedens*. This form resembles *macclounii*, differing only in its browner, less black, crown (which could be construed as a tendency toward paler crowned *minor*). The reason for this is that close examination of supposed *intercedens* specimens showed but 2 individuals exactly matching *intercedens*, that is, like *macclounii* except for a browner crown. Another 15 specimens, all from within the range that might be ascribed to *intercedens* (e.g. Peters 1948), are either diversely intermediate between *minor* and *macclounii*, or are near one or the

other but show tendencies toward the opposite form in traits not those restrictedly of *intercedens*. These problematic specimens include 5 of 7 from Cacolo, Lunda, Angola, all of which were assigned by Ripley & Heinrich (1966: 9) to *macclounii*.

Four specimens from Kwamouth in Zaire include the 2 that match *intercedens* (like *macclounii* but with a brownish black crown), another (RMCA 9951) resembling *macclounii* but having the crown more brown and the white back stripes narrowed, and a fourth (RMCA 9952) that resembles *macclounii* except for its brown crown bearing greyish traces and, perhaps, narrowed white dorsal stripes (but the skin preparation does not show the latter trait properly).

The critical specimens from the Duque de Bragança region, northwestern Malanje, Angola, include 4 from 42km north of that locality, obtained by Heinrich in November 1957, and 2 from 25km north and 15km east of that town, also obtained by Heinrich, in June 1954. Two of the 1957 birds are the sexed male and female assigned by Ripley & Heinrich (1966: 7) to *L. m. minor*. However, these 2 individuals differ markedly from *minor*. The male (YPM 78509) has nearly black ear coverts, white flecks under the eye, a white feather in the superciliary, white at the front and rear of the malar area, blackish brown over the bend of the wing, and its hindneck is blackish brown, nearly as in *intercedens*. The female (YPM 78510) also differs from *minor* in its blackish brown ear coverts, white malar flecking, deep brown nape (not so black as in *intercedens*, but darker than that of *minor*), and blackish brown bend of the wing. Both are adults that had enlarged gonads, hence their traits cannot be ascribed to immaturity. The unsexed bird from there has not been examined, but from Ripley & Heinrich's description, its lighter grey nape and sides of its head appear to be more *minor*-like than in the 2 birds I have just described. Ripley & Heinrich (1966: 8-9) assigned the other 1957 male and female to *intercedens*. These birds were taken 27 November (not 7 November as given by Ripley & Heinrich) and the 2 they assigned to "*minor*" were collected on 28 and 29 November. There is an error in the field number of the male (YPM 78519) "*intercedens*", no gonadal data are on the labels of the two "*intercedens*" (though such data are on labels of the two "*minor*" taken 1 and 2 days later), and habitat information is on the labels of "*intercedens*", but not of "*minor*". The male "*intercedens*" (YPM 78519) indeed is like *intercedens* except for its brown bend of the wing and hint of brown in the white back stripes. The female (YPM 78520) more strongly tends toward *minor* in its nape colour (paler brown than back), narrowed white back stripes, large brown area in the anterior malar region, brown-based feathers in the posterior malar area, brown traces on the ear coverts and sides of the neck, and brownish bend of the wing. The 1954 specimens include a male and female taken 1 and 2 June. The male (FMNH 220737) resembles *intercedens*, but the left malar area has brown-based feathers, the bend of the wing is brown, and the dorsal white stripes appear narrowed. The female (FMNH 220738) resembles *macclounii* in its very blue-black nape (only a trace of brown), its dorsal stripes are mixed white and grey-brown, its ear coverts and the rear of the malar region are mixed dark grey-brown and white, the superciliary area is dull greyish white, and the bend of the wing is coloured over, as in *minor*, but blackish, not brown (this bird has a blotchy greyish throat and upper breast). Thus, the Duque de Bragança specimens are not

typical of *minor* or of *intercedens*, and in their features they are more or less intermediate between *minor* and *macclounii*.

From 15 km southwest of Cacolo, Lunda, Angola, come 7 specimens assigned by Ripley & Heinrich (1966: 9) to *macclounii*. These specimens are puzzling, as 6 of the 7 show slight to strong grey-brown colour on the throat and breast, as in the case of female FMNH 220738 mentioned above. This colouration appears not to relate to sex or age variation, and I found suggestions of this pattern in *minor* as well as in specimens considered intergrades. Disregarding this throat-breast colour, the specimens include 2 (males YPM 78516, 78517) that fall within the range of *macclounii* in all features, although number 78516 is aberrant in having a white greater covert feather in its left wing, and both have a faint brown tint in the nape area. The female is brown under the eye with a few white flecks, its ear coverts are brown, the side of the neck is mixed grey-brown and white, the white superciliary is narrowed with much brown in it, the white back stripes are partly brown and narrowed, the hindcrown-nape is brownish black, and the bend of the wing is mixed dark brown and white. The other 4 birds were considered young males by Ripley & Heinrich, and they may not be fully adult, but they are not juvenal birds. All 4 have the full forecrown-forehead patch of the adult, their bills are fully "toothed" (juveniles lack or have the barest indications of "teeth"), and their noted soft part colours ("iris reddish brown, bill ivory, feet pink") are identical to those of the adults. These 4 have less pinkish-orange on the abdomen, although one closely approaches the adult female in this regard. In any case, there is no evidence that sub-adult birds differ from adults in the features by which *minor* differs from *macclounii*. One male (YPM 78515) lacks its tail and has an orange forecrown; it has a mixed brown and white superciliary, its ear coverts are white below and brown above, there is white in the brown under the eye, the side of the neck is patchy brown and white, the white back stripes are narrowed and partly brown, and the nape area is brownish black. Another male (YPM 78512) has the side of its head mainly dark brown with a white malar area and sparse white flecking in the superciliary, the ear coverts and the sides of the neck; its back stripes are nearly obscured by brown, the bend of the wing is brown as in *minor*, and the nape region is blackish brown. Male YPM 78513 has a blackish brown hindcrown to upper back (= *intercedens*) and resembles *intercedens* generally, but its back stripes are edged pale brown, the superciliary has pale brown mixed with white, there is brownish visible in the side of the neck and the bend of the wing is brown. The final male (YPM 78514) has a brownish black nape area, its back stripes are partly obfuscated by brownish, there is much grey-brown in the side of the neck, the superciliary is greyish white, its ear coverts have some grey-brown mixed with the white and the bend of the wing is mixed brown and white. Thus, the female and 4 supposedly young males (taken on 3 days spaced between 31 December and 10 January) are neither *macclounii* nor *intercedens*, but tend toward *minor* in various features that seem unrelated to sex or age variations.

A male (AMNH 259415) from Chitau, northwestern Bié, Angola, considered by Traylor (1960: 176) as *minor* but showing signs of intergradation with *macclounii* indeed is near *minor*, but its nape region shows a few darker brown streaks and it has some blotchy white in the ear coverts, the malar

area, and under the eyes. Traylor noted (1960: 176) that from Manyanga (= Manianga), Zaire, the type locality of *intercedens*, Neumann (1908), in describing that form, listed a specimen of *minor* along with a male and a female of the new subspecies. This specimen of *minor* probably is the male from Manianga in the Rothschild collection (AMNH 645666) available to me. This bird resembles *minor* in its features, but its ear coverts are paler than the rest of the head and it bears traces of white on the back hinting at the dorsal stripes of *macclounii*.

Other specimens show some features which are interesting in the light of the variations just discussed. An unsexed bird from Chibes Guillaume, on the Cuango (Kwango) River in Zaire (across from Tembo Aluma, Angola), is *macclounii* but with some brown on the crown, tending toward *minor* (or "*intercedens*"). Various specimens of *minor* (e.g., from Boma, lower Zaire, and Pungo Andongo, western Malanje, Angola) show paling of the ear coverts, a Congo (Brazzaville) specimen has some white feathers behind and below the eye, and an immature bird from Villoga Vumda, lower Zaire has a slight white superciliary. A small number of adult specimens of *minor* show a grey tone on the breast, or even the throat, although in none of them is there any brown such as found in the specimens described above.

CONCLUSIONS

There is at present no evidence for the sympatric occurrence of what could be considered phenotypically pure *minor* and *macclounii*. In fact, rather than remaining distinct, or being even more distinct (i.e. showing reinforced isolating mechanisms), where their ranges approach, *minor* and *macclounii* show clear indications of converging morphologically in their area of contact.

There remain problems with the small samples at hand, but the available information supports the views of Traylor (1960: 176) that *minor* and *macclounii* intergrade (i.e. interbreed extensively), and that the supposed race *intercedens* is "an unstable population of intergrades between *minor* and *macclounii* and not worthy of recognition." The zone in which variable hybrids may be found, at some localities with phenotypically pure individuals of either *minor* or *macclounii* (but not both at one locality), extends from Manianga and Kwamouth, Zaire, south and southeast into Congo and Malanje, Angola, and into adjacent areas of Bié and western Lunda, and probably Cuanza Norte, Angola.

Thus, there exists no basis for considering *minor* and *macclounii* specifically distinct, and I follow Traylor (1960, 1963), Goodwin (1964), Benson & Benson (1975) and Goodwin & Clancey (1978) in treating them as conspecific.

References:

- Benson, C. W. & Benson, F. M. 1975. Studies of some Malawi birds. *Arnoldia* 7(32).
- Benson, C. W., Brooke, R. K., Dowsett, R. J. & Stuart Irwin, M. P. 1970. Notes on the birds of Zambia: Part V. *Arnoldia* 4(40).
- Bouet, G. 1961. Oiseaux de l'Afrique tropicale. Pt. 2. *Faune Tropicale* XVII. Off. Rech. Scien. et Tech. Outre-Mer: Paris.
- Dowsett, R. J. & Dowsett-Lemaire, F. 1980. The systematic status of some Zambian birds. *Gerfaut* 70: 151-199.
- Goodwin, D. 1964. Some aspects of taxonomy and relationships of barbets (Capitonidae). *Ibis* 106: 198-220.

- Goodwin, D. & Clancey, P. A. 1978. Capitonidae. In *An Atlas of Speciation in African Non-passerine Birds* (Snow, D. W., ed.) British Museum (Natural History): London.
- Mackworth-Praed, C. W. & Grant, C. H. B. 1962. *Birds of the Southern Third of Africa*. Vol. I. Longmans, Green & Co., Ltd.: London.
- 1970. *Birds of West Central and Western Africa*. Vol. I. Longmans Group, Ltd.: London.
- Neumann, O. 1908. Neue Afrikanische Arten. *Orn. Monats.* 16: 27–28.
- Peters, J. L. 1948. *Check-list of Birds of the World*. Vol. II. Harvard University Press: Cambridge, Mass., U.S.A.
- Ripley, S. D. & Heinrich, G. H. 1966. Additions to the avifauna of northern Angola. II. *Postilla* 95.
- Traylor, M. A. 1960. *Notes on the Birds of Angola, Non-passeres*. Publ. Cult. Compan. Diamantes de Angola: Lisbon.
- 1963. *Check-list of Angolan Birds*. Publ. Cult. Compan. Diamantes de Angola: Lisbon.
- Verheyen, R. 1953. Oiseaux. Pt. 19. *Exploration du Parc National de l'Upemba*. Inst. Parcs Nat. du Congo Belge: Brussels.
- White, C. M. N. 1965. *A Revised Check-List of African Non-passerine Birds*. Government Printer: Lusaka, Zambia.
- Address: Dr. L. L. Short, American Museum of Natural History, New York, New York 10024, U.S.A.

©British Ornithologists' Club 1982.

Notes on some representatives of the Brown Flycatcher *Muscicapa latirostris* Raffles in Southeast Asia

by D. R. Wells

Received 21 June 1982

An earlier paper (Wells 1977) offered arguments based largely on status for reducing Deignan's Southeast Asian Brown-streaked Flycatcher *Muscicapa williamsoni* to a subspecies of the similar, much more widely occurring Brown Flycatcher *M. latirostris*. Subsequent records of intermediate plumage among migrants to the Kuala Lumpur area of Peninsular Malaysia have supported this proposition. It is now apparent, too, that the brownish ventral streaking characteristic of *williamsoni* also occurs as a post-juvenile (first winter) plumage of the subspecies *M. l. 'poonensis'*, as evidenced by many specimens in the British Museum (Nat. Hist.) (BMNH) from all over the Indian subcontinent collected between 7 August and March. Likewise, one specimen (BMNH 1919.12.20.164) of 3 *M. l. ?siamensis* dated 10–18 May from Dran, in the highlands of southern Vietnam, is fairly boldly streaked over the breast and sides of the throat, although the other 2 are virtually unstreaked. There is no independent way of telling the relative ages of these 3 specimens, but all are in fairly worn plumage, and in mid May are likely to have been on their breeding ground (cf. Deignan 1957).

The notes that follow give range extensions and evidence of the existence of additional tropical representatives of *M. latirostris* in 2 areas of Southeast Asia.

BORNEO

Borneo was included in the range of *M. latirostris williamsoni* on the strength of a subspecific intergrade collected in southern Sarawak in November 1956.

This action has been vindicated by the discovery of a second Sarawak specimen (BMNH 78.5.20.33) which agrees in detail with typical *williamsoni* in first-winter plumage. It lacks a locality and date but is moulting primaries 8–10 (descending), which on the evidence of birds of this age-class collected elsewhere is likely to have been a late northern winter event. There are no other Bornean records, although Captain D. M. Simpson recorded migrating Brown Flycatchers at an oil drilling platform off the west coast of Sabah from 10 August during 1981. This is five weeks previous to the earliest records of Palearctic forms on Borneo itself (Smythies 1981), but is within the known passage period of *williamsoni* into Peninsular Malaysia (Wells 1977).

Unexpectedly, a small, dark greyish brown specimen from Tawau district, eastern Sabah, provisionally identified by Thompson (1966) as a Dark-sided Flycatcher *M. sibirica*, also proves to be a Brown Flycatcher. The shape and proportions of the bill, diagnostic among Eurasian flycatchers, should not, perhaps, have been missed; but otherwise this bird has no obvious Sundaic affinities and before the description of Philippine *M. l. randi* (Amadon & DuPont 1970) would certainly have been a puzzle. The specimen from Tawau and *randi* are evidently close, but the Tawau individual is sufficiently smaller than *randi* to warrant separation. I call it

***Muscicapa latirostris umbrosa* subsp. nov.**

Description. Upperparts, face, sides of the throat, a broad pectoral band, flanks and thighs dull grey-brown, darkest on the wings and tail, paler below. The rest of the underparts, under wing-coverts, marginal feathers of the eyelids (forming a fine ring round the eye) and the base of the loreal feathers white, chin and throat finely flecked and abdomen finely and obscurely streaked, grey-brown. The outer secondary coverts retain fine, abraded rusty buff tips that form an inconspicuous wing-bar probably more extensive in fresh-plumaged individuals. In the dried skin the feet, claws, upper mandible and apical half of the lower mandible are horn-black and the basal half of the lower mandible yellowish white.

Distribution. The type locality.

Type. British Museum (Natural History) No. 1982.2.1, adult male, collected on 8 July 1963 in evergreen mixed dipterocarp forest, elevation 230 m, at the Quoin Hill cocoa research station, Tawau district, Sabah, Malaysia by A. D. Garcia. Original field number ADG 174.

Measurements of the type. Wing (flat and straightened) 60 mm, tail 49.2 mm, tarsus 12.5 mm, gape 15.1 mm, anterior margin of nostrils to bill-tip (nalespi) 7.4 mm, and width of the bill at the anterior margin of the nostrils 4.5 mm. Shortfall of the tips of the primaries, numbered descendantly, behind the tip of the closed wing (in mm, averaged over the 2 wings): primary one (10.5), two (9.4), three (8.7), four (7.5), five (3.5), six (1.3), seven (0), eight (0), nine (5.3) and ten (29.1).

Other material seen.

Muscicapa l. latirostris/cinereoalba (not distinguished in this study) (18). China: Szechuan 2 ♀♀, Yunnan 2 ♂♂, 3 ♀♀, 2 oo (BMNH, USNM). Malaysia: 1 ♀, 4 oo (University of Malaya, BMNH) plus a large number of migrants of

presumed Palearctic origin handled live for ringing (records of the University of Malaya bird-ringing project). Indonesia: West Java 1 ♂, 1 ♀, 1 ♂ (MZB), Sulawesi 1 ♀ (BZM). (For abbreviations see Acknowledgements.)

M. l. ?siamensis (9). Thailand: Chiang Mai and Lampang 1 ♂, 2 ♀♀ (USNM, TISTR). Burma: Tenasserim 2 ♂♂, 1 ♀ (BMNH). Vietnam: Da Lat district 1 ♂, 2 ♀♀ (USNM, BMNH, ZDUS).

M. l. segregata (6). Indonesia: Sumba island 3 ♂♂, 1 ♀, 2 ♂♂ (AMNH, MZB).

M. l. randi (8) Philippines: Luzon 3 ♂♂, 4 ♀♀ (DMNH), Negros 1 ♀ (BMNH).

Remarks. At 60 mm the wing of the new type is 5 mm shorter than in any other non-moulting Brown Flycatcher examined, a difference exaggerated by not more than one mm of feather wear. It resembles *M. l. randi* and *segregata*, and differs from all known continental populations, in having a large outer primary (10), and the outer wing proportionately broad such that the tip of primary 9 falls well behind, rather than well in front of, the tip of primary 5 (compare Fig. 1 in Wells 1977). *M. l. segregata* is otherwise paler, more ash-brown than *umbrosa*, with a larger bill (nalespi and width at nares, respectively, not below 8.2 and 4.8 mm (n=6)); while *randi* is slightly greyer and has a wholly unpigmented lower mandible. A rather brown, immature *M. l. randi* from Negros (BMNH 87.12.30.517) is closest to *umbrosa* on colour and is also its nearest geographical neighbour—symptomatic of a possible link via the southern Philippines.

From its near mid northern summer collection date and worn, unmoulted plumage, including flight feathers, it is possible that *umbrosa* was breeding or had recently bred locally. The shape of its wing implies sedentariness but is interpreted with reserve, since several *randi*, with an equally rounded wing-tip, have been netted at lights set to intercept the nocturnal autumn migration stream through a mountain pass in Luzon (cf. McClure 1974).

How closely *M. l. umbrosa* and the geographically more remote *segregata* of Sumba island are related is harder to guess. Stresemann & Stresemann (1974) have suggested that the latter, southern hemisphere isolate arose by the austral summer breeding of Palearctic migrants whose wintering range subsequently retreated behind Wallace's Line. Palearctic subspecies do resemble *segregata* in colour tone, and the biometrical characters shared by *segregata*, *umbrosa* and *randi* might therefore be convergent. Alternatively, since *umbrosa* occurs within the present 'wintering' zone of northern migrants, these blunt-winged subspecies could be interrelated relics within a formerly more continuous (? ancestral) eastern tropical breeding range, to some of which derived Palearctic-breeding migrants still return each northern winter. The common supposition that *segregata* (but not, apparently, *randi* ?) has fully speciated lacks conviction when almost nothing is recorded of its behaviour or habitat preferences. Its southern hemisphere breeding schedule (Siebers 1928) might facilitate interbreeding if out-of-season sexual recrudescence were actually to occur in long-distance, trans-equatorial migrants overshooting the Sunda Shelf.

THAILAND

Except for *M. l. segregata* on Sumba, Lesser Sunda islands, there has been no direct evidence of breeding by Brown Flycatchers anywhere in Southeast Asia. That some breeding occurs in the Indochinese subregion has nevertheless been inferred from a few specimens (including the types of *siamensis*

Gyldenstolpe) collected up to 4 weeks after the departure of recognisable winter migrants (Gyldenstolpe 1916, Riley 1938, Deignan 1957). All have come from mountains.

During the latter half of May 1981 a search for additional evidence was made on Doi Inthanon, the highest peak of the Thanon Thong Chai range, NW Thailand. The search was hampered by lack of information on likely preferred habitats, but eventually produced good views of a minimum of 5 individuals, including one definite pair. One, on 18 May, was singing in the canopy of deciduous *Pentacme*/dipterocarp-dominated 'pa-daeng' forest at about 800 m altitude, not far below a pine-covered crest marking the lower limit of the montane evergreen zone. Nearby, 2 days later, a pair of adults was found carrying food. For 20 minutes while observers were close they flew about, vocalising frequently (calls indistinguishable from those of Palearctic migrants), and from their behaviour were undoubtedly tending young. On the same morning at 1400 m a further calling adult was located in a clump of young *Pinus khasya*, and another heard nearby, by which eventually the first was attracted away. Possibly the same 2 birds were later seen foraging in small broad-leaved trees beneath mature pines. On 23 May a fifth adult was encountered in a similar situation at about 1000 m altitude. On Doi Inthanon these apparently attractive, rather open *Pinus khasya* groves occur only at the deciduous-montane evergreen forest ecotone (Robbins & Smitinand 1966) and no Brown Flycatchers were found during extensive searches above and below this boundary.

At close range in the field all individuals were plain, dull ash-brown shading to white from the centre of the abdomen to the lower tail-coverts, with a dark-tipped mandible. From Palearctic migrants, recorded in north-west Thailand by Deignan (1945), they differed by their brown (rather than whitish) chin and throat, concolorous with the breast (which was faintly streaked), lack of an eye-ring (conspicuously white in Palearctics) and loss through wear (by spring) of almost all pale edging to the secondary coverts and tertials. Unmoulted, though probably later breeding, *M. l. latirostris* from Szechuan and Yunnan, southern China (USNM, BMNH) show markedly more wing patterning in June and July.

No birds were collected and Doi Inthanon's population has not been identified. Types of the single recognised Indochinese subspecies, *siamensis*, also dated late May and considered by Deignan (1957) to have been resident on the Khun Tan range, 80 km east over the Chiang Mai plain from Doi Inthanon, nevertheless differ by having the chin and upper throat pale, a narrow greyish white eye-ring and the lower mandible all yellowish (Gyldenstolpe 1916). An adult male topotype (USNM 250230) examined in this study has these characters, being mainly off-white below sullied ash-brown on the breast and sides of the throat, and unstreaked.

Though less rufescent than *M. l. williamsoni*, this last bird and a similar male and female (USNM 278528, BMNH 1919.12.20.164) collected on 10 and 18 May at Dran, Da Lat district, within the pine zone of the highlands of southern Vietnam (Brunel 1978), are a shade more pinkish, less greyish brown on the upperparts than Palearctic *M. l. latirostris* in any plumage stage cycle. In a second female from Dran, dated 17 May (ZDUS), this tone is still more pronounced, and is brightest on the upper tail-coverts, as apparently it is in the holotype of *siamensis* (Gyldenstolpe 1916). A further 5 specimens

collected far to the west: including 2 females (TISTR 53-4128, 53-4130) from 1100 m altitude at Huai Mae Sanam, 60 km SW of but in the same range of hills as Doi Inthanon and 2 males and a female (BMNH 86.4.1.1146, 1148 & 1149) from Moulmein district and the approaches to Mt Mulayit, north Tenasserim, some 300 km SSW of Inthanon, are a close match. All are adults collected between late February and May, and none shows more than a trace of pale edging on the secondary coverts and tertials.

Ventral plumage is more varied. The Huai Mae Sanam females approach Doi Inthanon birds in being, if anything, even more solidly brown over the chin, throat and breast, and showing still less white on the abdomen. The others are largely off-white below finely and obscurely streaked ash-brown variously from the throat to the upper breast and flanks, or wholly unstreaked. BMNH 1919.12.20.164 from Dran is unusually heavily streaked, as already mentioned. Under wing-coverts range from whitish at Dran to whitish or buff (as in *williamsoni*) in northwest Thailand and Tenasserim. Doi Inthanon and Mae Sanam birds are the only ones without a contrasting eye-ring, which elsewhere varies from buff (again as in *williamsoni*) in Tenasserim via greyish white to white further east. Variation in lower mandible colour may be due partly to *post mortem* fading, from apically blackish as seen in live birds on Doi Inthanon to all yellow-horn as, for example, in specimens from Dran, 2 of which are stated to have had dark-tipped bills when collected in 1918. Those from Huai Mae Sanam, collected in 1960, are intermediate. Wing formulae are all as described for *M. l. siamensis* by Wells (1977).

Without more widespread fieldwork – unlikely in the foreseeable future – the taxonomic significance of this variation will be difficult to gauge. However, all the hill ranges on which these Brown Flycatchers have been found and supposedly breed strike roughly south and are separated by lowland flood-plains, across which gene-flow is likely to be slight. Isolation in a restricted altitudinal vegetation zone, even if some populations ultimately meet via the main outer tropical mountain mass to the north, may therefore have been sufficient to produce more than one localised subspecies.

Acknowledgements. I am grateful to the staff of the following museums for lending specimens: the American Museum of Natural History (AMNH), the British Museum (Natural History) (BMNH), the Berlin Zoological Museum (BZM), the B. P. Bishop Museum, Honolulu, the Bogor Zoological Museum, Indonesia (MZB), the Delaware Museum of Natural History (DMNH), the Sarawak Museum, the Thailand Institute for Scientific & Technological Research, housing the Thai national collection (TISTR), the United States National Museum (USNM), and the Zoology Department, University of Singapore, housing the former Raffles Museum collection (ZDUS). Fieldwork during 1981 was supported by Dr Boonsong Lekagul and I thank him for inviting me to join his May trip to Doi Inthanon. Excellent facilities were provided by the Royal Thai Forestry Department and the superintendent of the Doi Inthanon National Park, Khun Sathien Prasert. Messrs P. D. Round, D. S. Melville and R. Dobias have allowed me to make use of our joint field observations.

References:

- Amadon, D. & duPont, J. E. 1970. Notes on Philippine birds. *Nemouria* 1: 1-14.
 Brunel, J. 1978. Les oiseaux de la region de Lang-Bien, massif montagneux de la chaine Annamitique. *L'Oiseau et R.F.O.* 48: 54-68, 159-180.
 Deignan, H. G. 1945. The birds of northern Thailand. *Bull. U.S. Natn. Mus.* 186: i-v, 1-616.
 — 1957. A new flycatcher from Southeast Asia, with remarks on *Muscicapa latirostris* Raffles. *Ibis* 99: 340-344.

- Gyldenstolpe, N. 1916. Zoological results of the Swedish zoological expeditions to Siam 1911-1912 & 1914-1915. IV. Birds II. *Kungl. Svenska Vetensk. Handl.* 56: 1-160.
- McClure, H. E. 1974. *Migration and Survival of the Birds of Asia*. Bangkok: Applied Scientific Research Corporation of Thailand.
- Riley, J. H. 1938. Birds from Siam and the Malay Peninsula in the United States National Museum collected by Drs. Hugh M. Smith and William L. Abbott. *Bull. U.S. Natn. Mus.* 172: 1-581.
- Robbins, R. G. & Smitinand, T. 1966. A botanical ascent of Doi Inthanond. *Nat. Hist. Bull. Siam. Soc.* 21: 205-227.
- Siebers, H. C. 1928. Neue vögel von Sumba. *Treubia* 10: 399-404.
- Smythies, B. E. 1981. *The Birds of Borneo*. 3rd. Ed. (Ed. Earl of Cranbrook). Kuala Lumpur: The Sabah Society and Malayan Nature Society.
- Stresemann, E. & Stresemann, V. 1974. Problems resulting from the discontinuous distribution of *Muscicapa latirostris* Raffles. *J. Bombay Nat. Hist. Soc.* 71: 445-451.
- Thompson, M. C. 1966. Birds from North Borneo. *Univ. Kansas Publ. (Mus. Zool.)* 17: 377-433.
- Wells, D. R. 1977. *Muscicapa williamsoni* Deignan: a reappraisal. *Bull. Brit. Orn. Cl.* 97: 83-87.
- Address: D. R. Wells, Zoology Department, University of Malaya, Kuala Lumpur 22-11, Malaysia.

©British Ornithologists' Club 1982.

Twenty-one bird species new or little known from the Republic of Colombia

by John W. Fitzpatrick and David E. Willard

Received 25 June 1982

In reviewing and organizing recent accessions to the bird collection at the Field Museum of Natural History (FMNH), Chicago, we have encountered a number of specimens of birds previously unknown or poorly known from the Republic of Colombia. Most of these are specimens taken (1969-1971) by Kjell von Sneidern in the Andes of extreme southern Colombia, near the border between Putumayo and Narino, an area that until recently had not been studied by ornithologists. Mr von Sneidern's collection comes principally from 5 localities that will be mentioned repeatedly in the species accounts to follow. All are in humid forest, varying from upper montane cloud forest (La Victoria) down in elevation through the upper tropical zone (Estacion Bombeo de Guamuez; Llorente) to lowland tropical forest (San Antonio Guamuez). The entire collection contains 2344 specimens and 358 species. Here, we report only the specimens that present substantially new information about bird faunas and distributions in southern Colombia. One additional species new to the republic, *Odontophorus melanotus*, is reported from a collection made by M. A. Carriker, Jr.

The 5 von Sneidern localities are as follows (coordinates from Paynter Traylor 1981):

San Antonio Guamuez, Putumayo, elev. 400 m, about 0° 31' N, 76° 45' W; above the town of San Antonio, on the Rio Guamuez; dates in Paynter & Traylor (1981) should read Oct-Nov, 1969 and March-April 1971.

Estacion Bombeo de Guamuez, Putumayo, elev. 3000 ft (900 m), about 0° 40' N,

77° 00' W; a pump station above San Antonio; dates in Paynter & Traylor (1981) should read Feb-April 1971.

El Carmen, Narino/Putumayo border, elev. 5000 ft (1500 m), about 0° 40' N, 77° 10' W.

Llorente, Narino, elev. 1500–3200 m, about 0° 49' N, 77° 15' W; date in Paynter & Traylor should read June 1970, not 1974.

La Victoria, Narino, elev. 2800–3200 m, about 0° 35' N, 77° 10' W; very near the Ecuador border.

SPECIES ACCOUNTS

Odontophorus melanotus Dark-backed Wood-Quail

♂ (Conover #19577) from Ricaurte, Narino, elev. 1500 m, collected 27 June 1957 by M. A. Carriker, Jr. This western slope endemic previously was known only from Ecuador, making this the first recorded occurrence in Colombia.

Leptosittaca branickii Golden-plumed Parrot

4 ♀♀ (#287973–287976), 2 ♂♂ (#287971–2), all from Llorente (1800 m), collected 30 June and 1 July 1970. This rare, possibly endangered, parrot had been known from the central and eastern Andes of Colombia from Caldas south to Cauca. These specimens suggest that it probably occurs in the intervening, mid-montane forest elevations south through southern Ecuador (Taraguacocha) to Peru (Maraynioc).

Aegolius harrisi Buff-fronted Owl

♂ (#287982) from Llorente (1860 m), collected 3 June 1970. This rare owl is known from only a handful of specimens scattered throughout the northern and central Andes. From Colombia it was previously known positively only from Bogota trade skins, and from 2 previously unpublished specimens in the FMNH from El Tambo, Cauca (♂ #102112, ♀ #102225, both collected by K. von Sneider at 1560 m on 5 November 1939 and 24 May 1940, respectively).

Nyctibius leucopterus maculosus White-winged Potoo

1 ♂ (#287983) from Llorente (1800 m) collected 29 June 1970. This species is extremely rare in collections, although it is known from the Andean regions of Venezuela, Colombia and Ecuador. In Colombia the only positive records appear to be specimens from Norte de Santander, on the west side of the eastern Andes, and "Bogota" trade skins. The present specimen indicates that the species inhabits the moist, mid-montane cloud forest zone of the eastern Andes. This, combined with its nocturnal habits, may explain the species' unusual scarcity in collections.

Urostitte ruficrissa Rufous-vented Whitetip

2 ♂♂ (#310998, 310999), 5 ♀♀ (#311000–311004) from El Carmen (5000 ft), collected 27 November–9 December 1970. We agree with Brown & Hilty (in press) in following Meyer de Schauensee's (1964) earlier treatment of *ruficrissa* as specifically distinct from *benjamini*. The present specimens indicate a continuous distribution along the eastern slopes from Huila south to northeastern Ecuador.

Phlogophilus hemileucurus Ecuadorian Piedtail

2 ♂♂ (#310935, 310937), 1 ♀ (#310936) from Estacion Bombeo Guamuez (3000 ft), collected 14 March and 6 April 1971. These are the first specimens from Colombia of this hummingbird, a species still rare in collections. Our experience with its equally poorly known congener *harterti* in southern Peru suggests that it may actually be rather common locally, but only in an extremely narrow elevational zone in upper tropical forest (900–1200 m for *harterti*).

Polyplancta aurescens Gould's Jewelfront

1 ♂ (#286870), 3 ♀♀ (#286867–286869) from San Antonio Guamuez (400 m), collected between 3 and 25 October 1969. In Colombia this species had been recorded only in eastern Vaupes, although it was known from Limoncocha, Ecuador. The present specimens confirm that it occurs throughout the Amazonian forest section of Colombia.

Heliodoxa gularis Pink-throated Brilliant

16 specimens; 5 ♂♂, 2 ♀♀ from San Antonio Guamuez (400 m), collected 11–25 October 1969; 2 ♂♂, 6 ♀♀ from Estacion Bombeo Guamuez (3000 ft), collected 14 and 16 March 1971. These represent the first documented record in Colombia. A previous record at Leticia is almost certainly erroneous, as the species is known in Ecuador and northern Peru only from the foothills along the base of the Andes. The same is true for its allospecies, *branickii*, in southern Peru.

Heliodoxa s. schreibersii Black-throated Brilliant

13 specimens; 4 ♂♂ (#286872–286875) collected 11 October–4 November 1969 at San Antonio Guamuez; 1 ♀ (#293220) collected 31 March 1971 from San Antonio Guamuez; 4 ♂♂ and 4 ♀♀ (#292773–292780) collected 13 March–6 April 1971 from Estacion Bombeo Guamuez at 3000 ft. These represent the first specimens from Colombia, although the species is known from surrounding areas in Ecuador, Peru and Brazil.

Opisthoprora euryptera Mountain Avocetbill

3 ♂♂ (#288063–288065) from Llorente (3200 m) collected 27 May–1 June 1970. These records fill a 300 km hiatus in the known range of this rare hummingbird, between Cauca to the north and Papallacta, Ecuador to the south.

Galbula pastazae Coppery-chested Jacamar

2 ♂♂ (#311005, 311008), 2 ♀♀ (#311006, 311007) from El Carmen (5000 ft), collected 2–9 December 1970. These represent the first Colombian record of this little known jacamar, previously considered endemic to the upper cloud forests of central and northern Ecuador.

Deconychura stictolaema secunda Spot-throated Woodcreeper

2 ♂♂ (#286982, 286983), 1 ♀♀ (#310443) from San Antonio Guamuez (400 m), collected 16–23 October 1969. These are the first Colombian records of this species, although it had been known from surrounding localities in Brazil, Peru and Ecuador. Probably it occurs throughout the lowland forest

of southeastern Colombia. Noteworthy is the extremely small size of the presumed female compared to the known males (wing length (♀) 77.0 mm, (♂♂) 89.0, 92.5 mm), a pattern of dimorphism also noted by Zimmer (1929).

Sclerurus rufigularis fulvigularis Short-billed Leafscraper

2 ♀♀ (#292937, 287068) from Estacion Bombeo Guamuez (3000 ft), collected 11 October 1969 and 16 March 1971, respectively. Previous Colombian records of this leafscraper were limited to the Macarena mountains, c. 150 km to the north. The present records confirm that it also occurs at the base of the main eastern Andean slopes in Colombia.

Rhegmatorhina m. melanosticta Hairy-crested Antbird

1 ♂ (#287186), 1 ♀ (#287187) from San Antonio Guamuez (400m), collected 3 November and 30 October 1969 respectively. These are the first specimens from Colombia. Willis (1969) reports sight records at Puerto Umbria, Putumayo, 45 km north of San Antonio. On the basis of records in nearby Ecuador, Peru and Brazil, the species presumably occurs throughout the lowland forests of southeastern Colombia.

Myrmornis torquata torquata Wing-banded Antbird

2 ♂♂ (#292840, 292841), 1 ♀ (#292842) from Estacion Bombeo Guamuez (3000 ft), collected 15–17 March 1971. This species has a peculiarly patchy distribution throughout its rather extensive range, with a population in the foothills of northwestern Colombia and adjacent Panama, but is apparently absent through most of the eastern Colombian foothills and lowlands. Specimens of the present subspecies have been taken at La Morelia, Caqueta, and in adjacent Ecuador, and with those reported here confirm that a single, continuous population exists through the foothills of southern Colombia.

Phylloscartes orbitalis Spectacled Bristle-tyrant

4 ♂♂ (#295919, 295921–295923), 1 ♀ (#295920) from Estacion Bombeo Guamuez (3000 ft), collected 14–16 March 1971. These specimens represent the first records of the species from Colombia and are the basis for the Colombian record alluded to in Peters' Checklist (Traylor 1979). The species is known from scattered localities in Peru and Bolivia and one locality in the foothills of Ecuador. Probably its distribution is more or less continuous within an extremely narrow elevational zone, a pattern typical of other members of the enlarged genus *Phylloscartes* (including "*Pogonotriccus*").

Ramphotrigon fuscicauda Dusky-tailed Flatbill

1 ♂ (#287395) from San Antonio Guamuez (400 m), collected 30 October 1969. Until recently, this species was known from only a few specimens (Meyer de Schauensee 1966). It has been found commonly in southeastern Peru (Terborgh *et al.* in press), and is known from 2 localities in eastern Ecuador. This specimen is the first record from Colombia, and provides the reference mentioned in Peters' Checklist (Traylor 1979).

Notiochelidon flavipes Pale-footed Swallow

1 ♂ (#292251) from La Victoria (2000 m), collected 23 May 1970. This extremely rare swallow now is known from several localities in the eastern

Andes of Peru and from this single record from the eastern slopes in southern Colombia, besides the 3 records listed by Meyer de Schauensee (1966). Clearly it is a species confined to humid, upper cloud forest, where it is difficult to collect. Almost certainly its actual distribution is more continuous through the eastern Andes than current records suggest.

Turdus lawrencii Lawrence's Thrush

1 ♂ (#287485), 1 ♀ (#287484) from San Antonio Guamez (400 m), both collected on 11 October 1969. Recently, a specimen was reported from near Leticia by Morales (*vide* W. L. Brown). Ours are the only other specimens from Colombia. Brown & Hilty (in press) report several other sight records from southeastern Colombia. The species clearly occurs throughout the lowland Amazon basin of the country.

Diglossa glauca tyrianthina Deep-blue Flower-piercer

4 ♂♂ (#292721, 725, 726, 727), 3 ♀♀ (#292722–292724) from El Carmen (5000 ft), collected 29 November–15 December 1970. The only previous Colombian specimens of this locally distributed species are from Cerro Pax, c. 50 km south of El Carmen. Brown & Hilty (in press) report a sight record from above Florencia, Caqueta.

Atlapetes leucopis White-rimmed Brush-finch

4 ♂♂, 4 ♀♀ from 2 localities: 2 ♂♂, 2 ♀♀ (#292466–468, 292473) from La Victoria (2800 m), collected 21–23 May 1970; 2 ♂♂, 2 ♀♀ (#292469–292472) from Llorente (3200 m), collected 1–29 June 1970. Previous records exist from Cerro Pax, only c. 30 km south of La Victoria, but the present records are the first to confirm that the species occurs up nearly to the limit of trees. It is extremely poorly represented in collections, but the fact that 2 pairs were collected within a few days at Llorente suggests that it may be more common locally than museum records would indicate.

Remarks

Of the 21 species reported here, 7 represent the first records for Colombia (*Odontophorus melanotus*, *Phlogophilus hemileucurus*, *Heliodoxa gularis*, *Galbula pastazae*, *Deconychura stictolaema*, *Phylloscartes orbitalis*, and *Ramphotricon fuscicauda*) and 2 in addition represent the first specimen records (*Heliodoxa schreibersii* and *Rhagmatorhina melanosticta*). Of the remaining 12, 8 are little known cloud forest forms and 4 are lowland species. In all cases these records either fill in large gaps in the previously documented distributions, or they represent significant extensions of the known ranges.

Acknowledgments. We gratefully acknowledge the kind assistance of William L. Brown in providing us with unpublished information and maps for many of the species treated here. Our records have been incorporated into the Colombian guide recently completed by Brown & Hilty (in press). We thank our mentors and friends Emmet R. Blake and Melvin A. Traylor, Jr, who were instrumental in suggesting this region of Colombia to Mr. von Sneider and in obtaining the collection once it was made.

References:

- Brown, W. L. & Hilty, S. In press. *Guide to the Birds of Colombia*. Princeton University Press: Princeton, New Jersey.
- Meyer de Schauensee, R. 1964. *The Birds of Colombia*. Livingston: Narberth, Penn.
- 1966. *The Species of Birds of South America with their Distributions*. Livingston: Narberth, Penn.

- Paynter, R. A. Jr. & Traylor, M. A. Jr. 1981. Ornithological Gazetteer of Colombia. *Mus. Comp. Zool. Harvard University*.
- Terborgh, J. W., Fitzpatrick, J. W. & Emmons, L. In press. Annotated checklist of bird and mammal species of Cocha Cashu Biological Station, Manu National Park, Peru. *Fieldiana*.
- Traylor, M. A. Jr. (ed.). 1979. *Peters' Checklist of Birds of the World*. Vol. 8. Mus. Comp. Zool. Harvard University: Cambridge, Mass.
- Willis, E. O. 1969. On the behavior of five species of *Rhegmatorhina*, ant-following antbirds of the Amazon basin. *Wilson Bull.* 81: 363-395.
- Zimmer, J. T. 1929. The birds of the Neotropical genus *Deconychura*. *Field Mus. Nat. Hist. Publ.*, Zool. Ser. 17(1): 1-18.

Address: Dr. J. W. Fitzpatrick and Dr. D. E. Willard, Bird Division, Field Museum of Natural History, Roosevelt Road at Lake Shore Drive, Chicago, IL 60605, U.S.A.

© British Ornithologists' Club 1982

Books Received

Arlott, N. 1982. *Bird Paintings*. 28 colour plates. World's Work Ltd. (Heinemann): London. £12.50.

Norman Arlott is well known as an illustrator and designer of bird portraits. He has 28 examples of his work beautifully presented here, without text. They are brightly, perhaps almost too brightly, coloured portraits of a selection from his more favourite bird Families in Europe, Africa and the U.S.A. Each picture is bordered as if on a mount and the bird's name is printed on the back—each portrait, it seems, ready for instant removal, framing and hanging. The White-throated Bee-eater and the Ruby-crowned Kinglet have particularly effective backgrounds, while the Bullfinch is tactfully shown feeding only on ivy berries.

Tomkies, M. 1982. *Golden Eagle Years*. Pp. 202. Extensively illustrated in black-and-white and colour. Several short appendices and a bibliography. Heinemann: London £9.95

The author, who has written before quite extensively on wildlife in Canada and Scotland, often following lonely and prolonged study in wild isolation, turned his undivided attention to the Golden Eagle 8 years ago and it is astonishing to learn, though perhaps not surprising, that he covered 1500 miles on foot alone and located 28 eyries in a 300 sq. mile area of the Western Highlands, concentrating particularly on the life histories of 5 separate pairs. Every precaution to disguise all aspects of localities has been taken, even to fictionalising helpers' names, in order to prevent divulging critical directions to egg and chick thieves. The style is popular narrative, with many graphic, almost poetic, passages, but including as well many factual data and some personal theories, gathered during the author's dedicated searches for and observations and photography of eagles, several of which he was able regularly to recognise and name as individuals.

The clarity of the original photographs one must presume were surely better than presented here in black-and-white, since almost all disappointingly lack good definition. The many fewer colour photographs are mostly handsome and enjoyable.

NOTICE TO CONTRIBUTORS

Papers, whether by Club Members or by non-members, should be sent to the Editor, Dr. J. F. Monk, The Glebe Cottage, Goring, Reading RG8 9AP, and are accepted on the understanding that they are offered solely for publication in the *Bulletin*. They should be typed on one side of the paper, with double-spacing and a wide margin, and submitted with a *duplicate copy on airmail paper*.

Scientific nomenclature and the style and lay-out of papers and of References should conform with usage in this or recent issues of the *Bulletin*, unless a departure is explained and justified; but informants of unpublished observations (usually given as *in litt.* or pers. comm.) should be cited by initials and name only, e.g. "... catches wasps (B. Eater)", but "B.B.C. Gull informs me that . . .". Photographic illustrations, although welcome, can only be accepted if the contributor is willing to pay for their reproduction.

An author wishing to introduce a new name or describe a new form should append *nom.*, *gen.*, *sp.* or *subsp. nov.*, as appropriate, and set out the supporting evidence under the headings "Description", "Distribution", "Type", "Measurements of Type" and "Material examined", plus any others needed.

A contributor is entitled to 10 free reprints of the pages of the *Bulletin* in which his contribution, if one page or more in length, appears. Additional reprints or reprints of contributions of less than one page may be ordered when the manuscript is submitted and will be charged for. Authors may be charged for proof corrections for which they are responsible.

BACK NUMBERS OF THE BULLETIN

Available on application to Dr D. W. Snow, British Museum (Natural History), Tring, Herts HP23 6AP as follows: 1981-2 (Vols. 101 & 102) £3 each issue, 1980 (Vol. 100) No. 1 £4, No. 2, 3 & 4 £2 each, 1973-9 (Vols. 93-99) £2 each issue (4 issues per year for Vol. 93 and after), 1969-72 (Vols. 89-92) £1.50 each issue (6 per year), 1929-68 (Vols. 50-88) £1 each issue (generally 9 per year), earlier than Vol. 50 £2 each issue (generally 9 per year); Indices Vol. 70 and after £1 each, Vols. 50-69 £2 each, Vol. 49 and before £4 each. Long runs (at least 10 years) for Vol. 50 and after are available at reduced rates on enquiry. Orders over £50 post free.

MEMBERSHIP

Only Members of the British Ornithologists' Union are eligible to join the Club: applications should be sent to the Hon. Treasurer, Mrs. D. Bradley, 53 Osterley Road, Isleworth, Middlesex, together with the current year's subscription. The remittance and all other payments to the Club should always be in *sterling* unless an addition of £1.00 is made to cover bank charges for exchange, etc. Payment of subscription entitles a Member to receive all *Bulletins* for the year. Changes of address and revised bankers' orders or covenants (and any other correspondence concerning Membership) should be sent to the Hon. Treasurer as promptly as possible.

SUBSCRIPTION TO BULLETIN

The *Bulletin* may be purchased by non-members on payment of an annual subscription of £15.00 (postage and index free). Send all orders and remittances in sterling, unless an addition of £1.00 is made to cover bank charges, to the Hon. Treasurer. Single issues may be obtained as back numbers (see above).

CORRESPONDENCE

Correspondence about Club meetings and other matters not mentioned above should go to the Hon. Secretary, R. E. F. Peal, 2 Chestnut Lane, Sevenoaks, Kent TN13 3AR.

CONTENTS

	Page
CLUB NOTES	119
D. J. INGELS & J.-H. RIBOT. Variations in the white markings of the Blackish Nightjar <i>Caprimulgus nigrescens</i>	119
DICK WATLING. Notes on the birds of Makogai Island, Fiji Islands	123
I. J. MASON & J. L. MCKEAN. Taxonomic status of the Timor Cuckoo-shrike <i>Coracina personata</i> (Müller) from Timor	127
C. T. COLLINS & D. MINSKY. Natal pterylosis of three Neotropical blackbirds (Icteridae)	129
M. LOUETTE & M. HERREMANS. The Blue Vanga <i>Cyanolarius madagascarinus</i> on Grand Comoro	132
M. D. GALLAGHER. Nesting of the Lappet-faced Vulture <i>Torgus tracheliotus</i> in Oman	135
R. WILKINSON, R. BEECROFT & D. J. AIDLEY. Nigeria, a new wintering area for the Little Crake <i>Porzana parva</i>	139
E. MARJORIE NORTHCOTE. Sympatry of Common Cranes <i>Grus grus</i> with larger cranes in the last c. 125,000 years	141
L. L. SHORT. On the status of <i>Lybius (minor) macclounii</i>	142
D. R. WELLS. Notes on some representatives of the Brown Flycatcher <i>Muscicapa latirostris</i> Raffles in Southeast Asia	148
J. W. FITZPATRICK & D. E. WILLARD. Twenty-one bird species new or little known from the Republic of Columbia	153
BOOKS RECEIVED	158

It is hoped to send the *Bulletin* by Bulk Air Mail to all European destinations outside the British Isles and by Accelerated Surface Post to almost every destination outside Europe commencing with Vol. 103 No. 1. This will only apply to copies despatched from the printers on publication. Those whose subscriptions have not been received by the beginning of a month of publication will have their copies despatched by surface mail, as at present, after their current subscription has been paid.



23 71

BULLETIN
of the
BRITISH
ORNITHOLOGISTS' CLUB

EDITED BY
DR. J. F. MONK

Volume 102
1982



PREFACE

It is satisfactory to report that it has been possible to maintain the normal size of the *Bulletin* for Volume 102 as yet well within the Club's financial limitations. The Editor is most grateful to authors and referees for their co-operation and promptness in correspondence and in dealing with proofs. There seems every likelihood that the delay between acceptance of a paper and the date of its publication can be kept to about 9 months or less.

It is sad to have to thank C. W. Benson for the last time for his generous help in the past year, his untimely death having deprived all students of African ornithology of a freely shared expertise—he was a giant in his own field of knowledge.

J. H. Elgood deserves our thanks again for compiling the indices and I am, as always, most grateful to the Caxton & Holmesdale Press for their ready co-operation over the last twelve months.

JAMES F. MONK

COMMITTEE

1981-1982

D. R. CALDER, *Chairman* (1980)
B. GRAY, *Vice-Chairman* (1980)
Dr. J. F. MONK, *Editor* (1976)
R. E. F. PEAL, *Hon. Secretary* (1971)
Mrs. D. M. BRADLEY, *Hon. Treasurer* (1978)
R. D. CHANCELLOR (1979)
J. G. PARKER (1979)
R. A. N. CROUCHER (1980)
Rev. G. K. McCULLOCH, OBE (1981)

1982-1983

D. R. CALDER, *Chairman* (1980)
B. GRAY, *Vice-Chairman* (1980)
Dr. J. F. MONK, *Editor* (1976)
R. E. F. PEAL, *Hon. Secretary* (1971)
Mrs. D. M. BRADLEY, *Hon. Treasurer* (1978)
J. G. PARKER (1979)
R. A. N. CROUCHER (1980)
Rev. G. K. McCULLOCH, OBE (1981)
P. J. CONDER, OBE (1982)

BRITISH ORNITHOLOGISTS' CLUB

(Founded 5th October, 1892)

TITLE and OBJECTS

The objects of the Club, which shall be called the "British Ornithologists' Club", are the promotion of scientific discussion between Members of the British Ornithologists' Union and others interested in ornithology, and to facilitate the publication of scientific information connected with ornithology.

RULES

(as amended 20th May, 1975)

MANAGEMENT

(1) The affairs of the Club shall be managed by a Committee, to consist of a Chairman to be elected for three years, and who shall at the end of that period not be eligible for re-election for the next term; one Vice-Chairman, who shall serve for three years and who shall at the end of that period not be eligible for re-election for the next term; an Editor of the Bulletin to be elected for five years, and who shall be eligible for re-election for one further term; a Secretary and a Treasurer who shall be elected for a term of one year, but who shall be eligible for re-election at the next term. There shall be, in addition, four other Members, the senior of whom shall retire each year, the vacancy being filled by the election of another Member. Officers and Members of the Committee shall be elected by the Members of the Club at an Annual General Meeting and the names of such Officers and Members of the Committee nominated by the Committee for the ensuing year shall be circulated at least three weeks before the Meeting. Should any Member wish to propose another candidate, the nomination of such, signed by at least two Members, must reach the Secretary at least two clear weeks before the Annual General Meeting. Where more than one Member of the Committee shall be elected at a general meeting of the Club, for the purpose of determining the order for retirement the member whose surname precedes the other or others alphabetically shall be deemed to be the senior.

(2) Any Member desiring to make a complaint of the manner in which the affairs of the Club are conducted must communicate his complaint in writing to the Chairman who will raise the complaint at the next meeting of the Committee for a decision, or if he considers it a matter for urgency, will call a special meeting of the Committee to deal with it.

(3) If the conduct of any Member or Associate-Member, hereinafter together described as Members, shall be deemed by a majority of those present at a Committee meeting called for the purpose, to be prejudicial to the interests of the Club, that member shall be so informed in writing by the Secretary. After allowing reasonable time (not less than a clear fortnight after despatch of the letter by the Secretary) for a reply or an appearance in person before the Committee, the Committee shall have power to remove such member's name from the list of members subject to the member's right to appeal to a general meeting of the Club.

SUBSCRIPTIONS

(4) Any member of the British Ornithologists' Union may become a member of the Club on payment to the Treasurer of the annual subscription. The first subscription of a Member who joins in October, November or December shall cover his membership until 31st December in the following year. The rate of subscription for Members shall be decided by the Committee. A Member who ceases to be a Member of the British Ornithologists' Union shall also cease to be a member of the Club unless the Committee shall consider it is in the interests of the Club to permit him to remain a Member of the Club. Subscriptions shall fall due for payment on 1st January of each year. If any member shall fail to pay his subscription within six months after it has become due and shall fail to pay after written notice from the Treasurer calling upon him to do so within one month from the date of such notice the Committee shall be entitled to terminate his membership without further notice.

Associate Members enrolled under the Rule 4 hereby revoked shall retain all privileges as therein defined but no further Associate Members shall be admitted.

A member who has had an unbroken membership of the Club for fifty years shall become a Life Member, and shall not be required to pay any further Annual Subscriptions.

(5) Members of the British Ornithologists' Union who are ordinarily resident outside the British Isles, and ornithologists from the British Commonwealth, or from foreign countries, may be admitted at the discretion of any member of the committee as Temporary Associates (Overseas) of the Club for the duration of any visit to the British Isles not exceeding one year. Privileges of Temporary Associates (Overseas) shall be limited to attendance at the ordinary meetings of the Club and the introduction of guests.

Members of the British Ornithologists' Union ordinarily resident in the British Isles, may be admitted at the discretion of the Honorary Secretary as Temporary Associates (Home) to any one meeting during any calendar year.

MEETINGS

(6) The Club will meet not less than four times a year at a time and place to be arranged by the Committee. At these Meetings papers upon ornithological subjects will be read, specimens exhibited and described, and discussion invited.

(7) The Annual General Meeting of the Club shall be held in April or May of each year, on a date to be announced by the Committee. At this Meeting, the business transacted shall be the adoption of the Report of the Committee, the passing of the Accounts of the preceding year, the regulation of matters having reference to the *Bulletin*, the election of Officers and Members of the Committee, and any business of which due notice shall have been given to the Secretary prior to the 28th February in the same year.

(8) A Special General Meeting may be called at the instance of the Committee for any purpose which they deem to be of sufficient importance, or at the instance of not fewer than fifteen Members. Notice of not less than three weeks shall be given of every Annual General Meeting and Special General Meeting.

INTRODUCTION OF VISITORS

(9) Members and Temporary Associates (Overseas) may introduce visitors at any ordinary Meeting of the Club, but the same guest, except for husbands and wives of members, shall not be eligible to attend on more than three occasions during any period of twelve months. No former Member who has been removed for any cause, and who has not been reinstated, shall be allowed to attend as a guest.

'BULLETIN' OF THE CLUB

(10) An Abstract of the proceedings of the Club shall be printed under the title of the *Bulletin of the British Ornithologists' Club*, and one copy shall be distributed gratis to every Member who has paid the current annual subscription.

Contributors shall be entitled to as many free copies of the *Bulletin* as the Committee may from time to time determine but the Committee shall not be obliged to furnish any free copies if a contributor submits for publication an article deemed by the Editor to be a short note.

If contributors desire to exercise this privilege, notice must be given to the Editor when manuscripts are submitted, at which time copies in excess of the number of free copies may also be ordered. Payment for such additional copies shall be made to the Treasurer on demand.

Communications to the *Bulletin* shall not be restricted to members.

(11) No communication, the whole or any important part of which has already been published elsewhere, shall be eligible for publication in the *Bulletin*, except at the discretion of the Editor.

TRUST FUND

(12) Subject to the terms of any bequest or gift, any stocks, shares, other securities money or other property (whether real or personal) from time to time belonging to the Club may be vested in trustees for the Club if the Club shall by a special resolution so decide. Such special resolution shall appoint Trustees and shall specify the trusts under which the property is to be held.

AMENDMENT OF RULES

(13) These Rules or any of them may be revoked or amended and any new rule or provision may be substituted or added by a special resolution.

(14) In these Rules "a special resolution" means a resolution passed by a majority of not less than three fourths of the members voting thereon at a General Meeting of the Club of which not less than two weeks' notice specifying the intention to propose the resolution as a special resolution has been given.

LIST OF MEMBERS:

AMENDMENTS UP TO 31st DECEMBER 1982

(Compiled by Mrs. D. M. Bradley and R. E. F. Peal)

New Members

- AMBROSE, S. J., B.Sc., 15 Keppell Mews, Richmond Gardens, Rockingham, Western Australia, Australia 6168.
- BEECROFT, R., c/o Anadariya Farms Ltd., P.O. Box 2826, Kano, Nigeria.
- BISHOP, K. D., 23 Hauxton Road, Little Shelford, Cambs.
- BROWN, P. A., B.Sc., 29 Windmill Court, Windmill Road, Ealing, London W.5.
- CARTER, C., P.O. Box 71793, Ndola, Zambia.
- COLDEWEY, C. J., Bolmansweg 6, 7214 DL Epse, The Netherlands.
- FOLKEDAL, S., Eide, N 4250 Kopervik, Norway.
- HOWELL, K. M., PH.D., Dept. of Zoology, University of Dar es Salaam, Box 35064, Dar es Salaam, Tanzania.
- JONES, C. G., c/o Forestry Quarters, Black River, Mauritius.
- KETTLE, R. H., B.A., 75 Dupont Road, London SW20 8EH.
- KLONOWSKI, T. J., M.A., 6356 Meadville Road, Middleport NY 14105, U.S.A.
- LAWSON, W. J., M.Sc., 75 Aquarius Drive, Kingston, Queensland 4114, Australia.
- LEMMON, D., B.Sc., Dept. of Biology, University of Toledo, 2801 West Bancroft Street, Toledo OH 43606, U.S.A.
- LITTLEMORE, F. P., Plemstall, 10 Lytham Road, Rugby, Warwickshire CV22 7PA.
- MCGRATH, D., B.Sc., 23 Morley Terrace, Waterford, Eire.
- MASON, I. J., CSIRO Div. of Wildlife Research, P.O. Box 273, Atherton, Queensland 4883, Australia
- MEDWAY, D. G., LL.B., P.O. Box 476, New Plymouth, New Zealand.
- MEEUS, Dr. H., Langvenstraat 25, B 2300, Turnhout, Belgium.
- OREN, D. C., PH.D., Ornitologia, Museu Goeldi, Caixa Postal 399, 66.000 Belem, Para, Brazil.
- OSBORN, K. P., 24 Rykhill, Chadwell-St.-Mary, Grays, Essex RM16 4RR.
- PETERSEN, Aevor, B.Sc., Natturufraedistofnun Islands, P.O. Box 5320, Reykjavik, Iceland.
- PICKERING, R. H., B.Sc., D.T.A., Agriculture Dept., P.O. Box 129, Port Vila, Vanuatu.
- PRITCHETT, R. S., 21 Ivanhoe Road, Liverpool L17 8XE.
- QUAY, W. B., PH.D., 1421 Harbor View Drive, Galveston TX 77550, U.S.A.
- REED, D. H., Peashill Cottage, Peashill Lane, Great Barford, Beds. MK44 3HA.
- REID, J. B., B.A., Dept. of Psychology, University of Keele, Keele, Staffs. ST5 5BG.
- ROBERTS, T. J., M.A., P.O. Box 311, Malir City Post Office, Karachi 23, Pakistan.
- ROBSON, J. E., 1 Lawnfold, Hadfield, Hyde, Chechire SK14 8EG.
- RUMSEY, S. J. R., B.Sc., Woodcote, Peter James Lane, Fairlight, Sussex.
- TETLOW, H. H., WESTBURY, 35 Stone Road, Eccleshall, Stafford ST21 6DL.
- THIEDE, Dr. W., An der Ronne 184, D-5 Köln 40, West Germany
- THOMAS, D. H., PH.D., Dept. of Zoology, University College, Cardiff CF1 1XL.
- TURNBULL, S. C., 15 The Crescent, Keswick, Cumbria CA12 5HB.
- VAN DEN BERG, A. B., Duinlustparkweg 98, 2082 EG Santpoort-Zuid, The Netherlands.
- VOWLES, Mrs G. A., Falfosa, Sta Barbara de Nexe, 8000 Faro, Portugal.

WEIR, D. A., 10 Killycomaine Park, Portadown, Co. Armagh, Northern Ireland.
 WILKINSON, R., PH.D., Dept. of Biological Sciences, Bayero University, P.M.B. 3011,
 Kano, Nigeria.

Deaths

The Committee much regrets to report the deaths of the following Members:

Mr. C. W. BENSON, O.B.E.
 Miss E. M. GODMAN, O.B.E.
 Mr. D. W. K. MACPHERSON
 Mr. C. W. G. PAULSON-ELLIS

Resignations

BARTON, Ms. J.; DUFF, A. G.; HOLCOMBE, A. J.; NICHOLSON, E. M.; OREEL, G. J.;
 PRENDERGAST, Col. E. D. V.; SENAR JORDA, J. C.; SMALLEY, Dr. M. E.; START, J. M.;
 WADLEY, N. J. P.

Removed from Membership under Rule (4)

COOMBES, R. A. H.; DAVIES, O. J. H.; GORE, M. E. J.; KAKIZAWA, R.; KITSON,
 A. R.; LAWRENCE, D. W.; LIMENTANI, J. D.; WILLIAMS, M. D.

Notice was received of the following resignations in respect of 1983:—

CAPE, J. A. D.; FROST, R. A.; HURFORD, M. J. L.; INSLEY, H.; JOHNSON, Dr. Hazel M.;
 TAYLOR, M. R.

LIST OF AUTHORS AND CONTENTS

ACCOUNTS, 1981...	...	...	...	...	...	...	...	...	...	44
AIDLEY, D. J.	See	WILKINSON, R.								
ANNUAL GENERAL MEETING	...	...	...	...	...	...	...	...	...	1, 43
ASH, J. S.	A major extension in distribution of the Stripe-backed									
	<i>Prinia Prinia gracilis</i> in Somalia...	...	...	...	...	...	...	...	...	2-5
	The Somali Short-billed Crombec <i>Sylvietta philippae</i> in Somalia									
	and Ethiopia	...	...	...	...	...	...	...	...	89-92
AUTAR, L.	See	SPAANS, A. L.								
BEECROFT, R.	See	WILKINSON, R.								
BENSON, C. W.	See	LOUETTE, M.								
BOLES, WALTER E.	Juvenal plumage of the White-throated									
	Thicket-flycatcher <i>Pachycephalopsis poliosoma</i>	...	...	...	...	...	...	...	...	40-41
BOOKS RECEIVED	...	...	...	...	...	...	...	...	...	42, 117, 158
BROWN, M. R.	See	GALLAGHER, M. D.								
BRUCE, MURRAY D.	Occurrence of the Lesser Adjutant Stork									
	<i>Leptoptilos javanicus</i> on Bali, Indonesia...	...	...	...	...	...	...	...	...	39-40
BUCKLEY, FRANCINE G.	See	GOCHFELD, M.								
BUCKLEY, P. A.	See	GOCHFELD, M.								

CHEKE, R. A.	Additional information on the Rock Pratincole <i>Glareola nuchalis</i> in Togo	116-117
COLLINS, CHARLES T.	The natal pterylosis of <i>Manacus manacus</i> (Pipridae)	37-39
COLLINS, CHARLES T. & MINSKY, DENNIS	Natal pterylosis of three Neotropical blackbirds (Icteridae)	129-131
COLSTON, P. R.	A new species of <i>Mirafr</i> (Alaudidae) and new races of the Somali Long-billed Lark <i>Mirafr somalica</i> , Thekla Lark <i>Galerida malabarica</i> and Malindi Pipit <i>Anthus melindae</i> from southern coastal Somalia	106-114
COMMITTEE, REPORT FOR 1981		1-2
CONDER, P. J.	An illustrated address on Some Wetlands in Sind	45
COWAN, P. J.	Birds in west central Libya, 1980-81	32-35
DUFFEY, D. C.	Land-birds of a guano island off the coast of Peru	87-88
ELGOOD, J. H.	The case for the retention of <i>Anaplectes</i> as a separate genus	70-75
FITZPATRICK, J. W. & WILLARD, D. E.	Twenty-one bird species new or little known from the Republic of Colombia	153-158
GALLAGHER, M. D.	Nesting of the Lappet-faced Vulture <i>Torgos tracheliotus</i> in Oman	135-139
GALLAGHER, M. D. & BROWN, M. R.	Golden Eagle <i>Aquila chrysaetos</i> breeding in Oman, eastern Arabia	41-42
GOCHFELD, M., BUCKLEY, P. A. & BUCKLEY, FRANCINE G.	Plumage 'atavisim' in a Black-crowned Night Heron <i>Nycticorax nycticorax</i>	92-94
GOODMAN, STEVEN M.	The introduction and subspecies of the Rose-ringed Parakeet <i>Psittacula krameri</i> in Egypt	16-18
GOODWIN, DEREK	On the status of the Green Pheasant	35-37
HARRISON ZOOLOGICAL MUSEUM, Visit to		119
HAVERSCHMIDT, F.	The status of the Rough-winged Swallow <i>Stelgidopteryx ruficollis</i> in Suriname	75-77
HERREMANS, M.	See LOUETTE, M.	
HOCKEY, P. A. R.	The taxonomic status of the Canary Islands Oystercatcher <i>Haematopus (niger) meadewaldoi</i>	77-83
HOUSTON, D. C.	An illustrated address on Vultures	119
INGELS, D. J. & RIBOT, J.-H.	Variations in the white markings of the Blackish Nightjar <i>Caprimulgus nigrescens</i>	119-122
JENSEN, F. P. & STUART, S. N.	New subspecies of forest birds from Tanzania	95-99
LOUETTE, M. & BENSON, C. W.	Swamp-dwelling weavers of the <i>Plocens velatus vitellinus</i> complex, with the description of a new species	24-30

LOUETTE, M. & HERREMANS, M.	The Blue Vanga <i>Cyanolanius</i> <i>madagascarinus</i> on Grand Comoro	... ..	132-135
MASON, I. J.	The identity of certain early Australian types referred to the Cuculidae	... ..	99-106
MASON, I. J. and McKEAN, J. L.	Taxonomic status of the Timor Cuckoo-shrike <i>Coracina personata</i> (Müller) from Timor	... ..	127-129
McKEAN, J. L.	See MASON, I. J.		
MILDER, SHARON L. & SCHREIBER, RALPH W.	Notes on the nesting behavior of <i>Acrocephalus aequinoctialis</i>	... ..	20-22
MINSKY, D.	See COLLINS, CHARLES T.		
NIKOLAUS, G.	A new race of the Spotted Ground Thrush <i>Turdus</i> <i>fischeri</i> from South Sudan	... ..	45-47
NOERDJITO, M.	See SOMADIKARTA, S.		
NORTHCOTE, E. MARJORIE	Sympatry of Common Cranes <i>Grus</i> <i>grus</i> with larger cranes in the last c. 125,000 years	... ..	141-142
OLSON, STORRS L.	The distribution of fused phalanges of the inner toe in the Accipitridae	... ..	8-12
ORIAN, GORDON H.	An illustrated address on Mates and Real Estate in Blackbird Social Systems	... ..	43
PARKER, SUSAN ALLEN	See PARKER, THEODORE A., III		
PARKER, THEODORE A., III	First record of the Chilean Woodstar <i>Eulidia yarrellii</i> in Peru		86
PARKER, THEODORE A., III and PARKER, SUSAN ALLEN	Behavioural and distributional notes on some unusual birds of a lower montane cloud forest in Peru	... ..	63-70
PARKES, KENNETH C.	Nomenclatural notes on the phalaropes	... ..	84-85
	A long overlooked homonymy in the family Tinamidae	... ..	85-86
REMSEN, J. V., Jr.	See SCHULENBERG, THOMAS S.		
RIBOT, J.-H.	See INGELS, D. J.		
ROUND, PHILIP D.	Speckled Wood pigeon <i>Columba hodgsonii</i> and Lesser Whitethroat <i>Sylvia curruca</i> , two new species for Thailand	... ..	14-16
SCHREIBER, RALPH W.	See MILDER, SHARON L.		
SCHUCHMANN, K.-L. & WOLTERS, H. E.	A new subspecies of <i>Serinus estherae</i> (Carduelidae) from Sulawesi	... ..	12-14
SCHULENBERG, THOMAS S. & REMSON, J. V., Jr.	Eleven bird species new to Bolivia	... ..	52-57
SELLER, T. J.	An illustrated address on the compatibility of Bullfinches and fruit crops	... ..	87
SHORT, L. L.	On the status of <i>Lybius (minor) macclounii</i>	... ..	142-148

- SNOW, D. W. See TEIXEIRA, D. M.
- SPAANS, A. L. & AUTAR, L. First record of Wilson's Phalarope
Phalaropus tricolor from Suriname ... 114-115
- SOMADIKARTA, S. The White-bellied Swiftlet *Collocalia esculenta*
 from Java ... 18-20
- SOMADIKARTA, S. & NOERDJITO, M. The Lesser Whistling Duck
Dendrocygna javanica (Horsfield) in Flores ... 94-95
- STUART, S. N. See JENSEN, F. P.
- TAYLOR, P. B. First Zambian records of Chestnut-banded Sand-
 plover *Charadrius pallidus* and observations of White-fronted Sandplover
C. marginatus and Cape Teal *Anas capensis* at the same locality ... 5-7
- TEIXEIRA, D. M. & SNOW, D. W. Notes on the nesting of the
 Red-billed Curassow *Crax blumenbachii* ... 83-84
- THOMAS, BETSY TRENT Weights of some Venezuelan birds ... 48-52
- WALDBAUER, G. P. & WALDBAUER, SUSAN M. First sight record
 of the Spotted Dove *Streptopelia chinensis* from Luzon and a summary of its
 range expansion in the Philippines ... 22-24
- WALDBAUER, SUSAN M. See WALDBAUER, G. P.
- WATLING, DICK Notes on the birds of Makogai Island, Fiji
 Islands ... 123-127
- WELLS, D. R. Biological species limits in the *Cettia fortipes* complex 57-62
 A confirmation of the specific relations of *Cuculus saturatus*
insulindae Hartert ... 62-63
 Notes on some representatives of the Brown Flycatcher
Muscicapa latirostris Raffles in Southeast Asia ... 148-153
- WILKINSON, R., BEECROFT, R. & AIDLEY, D. J. Nigeria, a new
 wintering area for the Little Crane *Porzana parva* ... 139-140
- WILLARD, D. E. See FITZPATRICK, J. W.
- WOLTERS, H. E. See SCHUCHMANN, K.-L.

INDEX TO SCIENTIFIC NAMES

(Compiled by J. H. Elgood)

All generic and specific names (of birds only) are indexed. Subspecific names are included in general only if new and are indexed in bold print under the generic and specific names. Some other subspecies of special interest are included. New species are given in bold print.

- Aburria aburri 69
aburri, Aburria 69
Acanthis cannabina 34
Accipiter 9
— badius 8
— bicolor 8
— brevipes 8
— cooperii 8
— erythronemius 8
— fasciatus 8
— gentilis 8
— melanoleucus 8
— nissus 8
— striatus 8, 69
Acrocephalus aequinoctialis 20-22
— schoenobaenus 34
Acridotheres fuscus 127
— tristis 126
Actitis macularia 69
acuta, Anas 34
Adelomyia melanogenys 69
aedon, Troglodytes 51, 70
Aegolius harrisi 154
Aegyptius monachus 8, 138
aegyptius, Caprimulgus 34
aenea, Chloroceryle 50
aequinoctialis, Acrocephalus 20-22
— Buteogallus 10
— Geothlypis 51
aeruginosus, Circus 20-22
africanus, Gyps 8
Agelaius 130
— icterocephalus 129-130
— phoeniceus 130
Aglaiocercus kingi 50, 69
Alaemon alaudipes 34
— hamertoni 4
alaudipes, Alaemon 34
alba, Motacilla 34
albescens, Synallaxis 50
albicaudatus, Buteo 8
albicilla, Haliaetus 8
albicollis, Ficedula 34
— Leucopternis 8, 69
— Nyctidromus 50
— Saltator 52
— Turdus 70
albigula, Buteo 69
Alcedo atthis 34
alcinus, Machaeramphus 8
Amazilia fimbriata 50
— tobaci 50
Amazona mercenaria 69
ambiguus, Ramphastos 69
americana, Chloroceryle 50, 69
americanus, Coccyzus 50
Ammodramus humeralis 52
Ammomanes deserti 34
Ampeliodes tschudii 69
anabatinus, Thamnistes 69
Anabacerthia striaticollis 69
Anaplectes 70-74
Anaplectes leuconotus 73, 74
— melanotis 73, 74
— rubriceps 74
Anas acuta 34
— capensis 5, 7
— erythrorhynchos 7
— querquedula 33
Ancistrops strigilatus 69
angolensis, Gypohierax 8
anthracinus, Buteogallus 8
Anthus campestris 34
— cervinus 34
— melindae 106, 112-113
Anthus melindae pallidus
subsp. nov. 113
antigone, Grus 141
antisianus, Pharomachrus 69
apiaster, Merops 34
apivorus, Pernis 8
Aplonis tabuensis 126
approximans, Circus 125
aquaticus, Rallus 33
Aquila audax 8
— chrysaetos 8, 41, 137
— gurneyi 8
— heliaca 42
— pomarina 8
— rapax 8, 42
— verreauxii 8
— wahlbergi 8
aquila, Eutoxeres 69
Aratinga (leucophthalmus) 69
— pertinax 50
Ardea cinerea 34, 93
— purpurea 34
Ardeola 93

- capensis*, *Anas* 5, 7
 — *Haematopus* 78
 — *Zonotrichia* 88
capitale, *Poecilotrichus* 66, 68, 70
Caprimulgus 119
 — *aegyptius* 34
 — *longirostris* 88
 — *nigrescens* 119–122
 — *sericocaudatus* 53, 56
Capsiempis flaveola 51
carbo, *Ramphocelus* 51
Carduelis magellanicus 87
 — *olivacea* 70
 — *psaltria* 52
Carpodacus mexicanus 131
carunculata, *Foulehaio* 126
Caryothraustes humeralis 55
cassini, *Malimbus* 72, 73
castaneiceps, *Conopophaga* 69
castaneiventris, *Sporophila* 70
Catharus dryas 70
 — *minimus* 51
Cathartes aura 87
caudacutus, *Hirundapus* 123
cayana, *Dacnis* 70
 — *Piaya* 50, 69
 — *Tangara* 51
cayanensis, *Myiozetetes* 50
 — *Leptodon* 8
ceceliae, *Metriopelia* 88
cela, *Cacicus* 51
Cephalopterus ornatus 69
cephalotes, *Myiarchus* 70
Cercomacra nigrescens 69
Certhiaxis cinnamomea 50
cervinus, *Anthus* 34
Cettia 57
 — *fortipes* 57–62
 — *vulcania* 61
Chaetura cinereiventris 69
Chalybura buffonii 50
Charadrius dubius 34
 — *hiaticula* 6
 — *marginatus* 5–7
 — *pallidus* 5–7
 — *pecuarius* 5–6
chathamensis, *Haematopus* 80
cheela, *Spilornis* 8
Chelictinia riocourii 8
Chelidoptera tenebrosa 75
chilensis, *Tangara* 70
chinensis, *Streptopelia* 22–23, 125
Chiroxiphia 38
 — *lanceolata* 50
 — *linearis* 37
chloris, *Halcyon* 123, 126
 — *Piprites* 70
Chloroceryle aenea 50
 — *americana* 50, 69
Chlorochrysa calliparaea 70
Chlorophonia cyanea 70
Chloropipa unicolor 70
chloropus, *Gallinula* 33
Chlorospingus canigularis 68, 69, 70
 — *flavicularis* 66, 68, 69, 70
 — *ophthalmicus* 69
 — *parvirostris* 69
Chlorostilbon mellisugus 50, 69
Chondrohierax uncinatus 8
chrysaetos, *Aquila* 8, 137
Chrysolampis mosquitos 50
chrysopterus, *Masius* 70
Chrysotilus punctigula 50
chrysotis, *Tangara* 66, 68, 69, 70
cinchoneti, *Conopias* 70
Cinclodes nigrofumosus 87
cinerascens, *Cuculus* 104, 105
cinerea, *Ardea* 34, 93
 — *Coracina* 132
 — *Motacilla* 34
 — *Serpophaga* 70
cinereiventris, *Chaetura* 69
cinereum, *Todirostrum* 51, 70
cinereus, *Circaetus* 8
 — *Circus* 8
cinnamomea, *Certhiaxis* 50
 — *Pyrhomyias* 70
 — *Synallaxis* 50
Circaetus cinereus 8
 — *gallicus* 8, 33
Circus aeruginosus 33
 — *approximans* 125
 — *cinereus* 8
 — *cyaneus* 8
 — *macrourus* 34
 — *melanoleucus* 8
 — *pygargus* 8
*cirrhatu*s, *Spizaetus* 9
Clytorhynchus vitiensis 126
Cnemotriccus fuscatus 51
coccineus, *Calochaetes* 66, 68, 70
Coccyzus americanus 50
Coeligena coeligena 50
Coereba flaveola 49, 51, 70
coerulescens, *Saltator* 49, 52
colchicus, *Phasianus* 35–37
Colibri thalassinus 50
Colius passer 73
Collocalia esculenta 18–19
 — *fucivora* 18–19
 — *linchi* 18–19
 — *spodiopygia* 124
collybita, *Phylloscopus* 35
Colonia colonus 70
colonus, *Colonia* 70
Columba hodgsonii 14–15
 — *plumbea* 69
 — *vitiensis* 125
Columbina minuta 50
 — *talpacoti* 49, 50

comorensis, *Cyanolanius* 132-135
 conirostris, *Arremonops* 48, 52
Conirostrum speciosum 51
Conopias cinchoneti 70
 — *inornata* 48, 50, 130
Conopophaga castaneiceps 69
Contopus fumigatus 70
cooperii, *Accipiter* 8
cora, *Thaumastora* 86
Coracina cinerea 132
 — *larvata* 128-129
 — *melanops* 128
 — *melanotis* 128
 — *novae-hollandiae* 127-129
 — *personata* 127-129
 — *pollens* 128-129
 — *schistacea* 128-129
 — *subpallida* 128
Coragyps atratus 87
coronata, *Pipra* 37
coronatus, *Malimbus* 72
coronatus, *Stephanoaetus* 8
Corvus ruficollis 35
Coryphospingus pileatus 52
Cranioleuca curta 69
crassirostris, *Oryzoborus* 52
Crax blumenbachii 83-84
Creurgops verticalis 70
cristata, *Elaenia* 51
Crotophaga major 50
 — *sulcirostris* 50
Cryptolybia 95
 — *woodwardi* 95
cryptoxanthus, *Myiophobus* 65, 68, 70
Crypturellus obsoletus 69
cuculatus, *Ploceus* 29, 30
cuculoides, *Aviceda* 8
Cuculus cinerascens 104, 105
 — *flabelliformis* 99-105
 — *incertus* 105
 — *insulindae* 62-63
 — *lepidus* 62-63
 — *poliocephalus* 62-63
 — *prionurus* 105
 — *pyrrhophanus* 100-105
 — *rubricatus* 100-105
 — *rufulus* 100-105
 — *saturatus* 62-63
culicivorus, *Basileuterus* 51
curruca, *Sylvia* 14-15
curtata, *Cranioleuca* 69
cyanea, *Chlorophonia* 70
cyaneus, *Circus* 8
cyanicollis, *Tangara* 70
cianocephala, *Thraupis* 70
Cyanocompsa brissonii 52
Cyanocorax ynces 51, 70
Cyanolanius 134
 — *madagascarinus* 132-134

Cyanolanius madagascarinus bensoni
subsp. nov. 132
Cyanolanius madagascarinus comorensis
 132-135
cyanoleuca, *Notiochelidon* 49, 51, 55, 70
cianopectus, *Sternoclyta* 50
cianopectera, *Tangara* 51
cyanotis, *Tangara* 70
Cyclarhis gujanensis 51
Cyphorhinus thoracicus 70
Cypseloides rutilus 69

Dacnis cayana 70
 — *lineata* 70
Deconychura stictolaema 155, 157
Delichon urbica 34
Dendrocinclla fuliginosa 50, 69
Dendrocycyna javanica 94
Dendroica petechia 51
denti, *Sylvietta* 89
derbianus, *Aulacorhynchus* 69
deserti, *Ammomanes* 34
dicrocephalus, *Ploceus* 26
Diglossa glauca 70, 157
doliatus, *Thamnophilus* 50, 65
Dolichonyx oryzivorus 88
domesticus, *Passer* 87, 88
Doryfera johannae 69
 — *ludoviciae* 69
dryas, *Catharus* 70
Dryotriorchis 9
dubius, *Charadrius* 34
Ducula badia 14
 — *latrans* 124-125
 — *pacifica* 124
Dysithamnus mentalis 69

ecaudatus, *Terathopius* 8
Egretta garzetta 33
 — *sacra* 125
Elaenia cristata 51
 — *flavogaster* 51
 — *parvirostris* 51
Elanoides forficatus 8, 50, 69
Elanus 10
 — *caeruleus* 8
 — *leucurus* 8
elegans, *Laniisoma* 69
Eopsaltria australis 102
episcopus, *Thraupis* 49, 51, 70
epops, *Upupa* 34
Eremomela 89
 — *icteropygialis* 90
erythrogaster, *Malimbus* 72
erythronemius, *Accipiter* 8
erythrorhynchus, *Anas* 7
Erythrotriorchis 9
esculenta, *Collocalia* 18-19
estherae, *Serinus* 12-14

- guianensis, *Morphnus* 8, 69
 guimeti, *Klais* 69
 gujanensis, *Cyclarhis* 51
 gularis, *Heliodoxa* 155, 157
 — *Paroaria* 52, 131
 gurneyi, *Aquila* 8
 guttatus, *Xiphorhynchus* 50
 guy, *Phaethornis* 69
Gymnomystax mexicanus 51
Gymnorhina tibicen 127
 gyrola, *Tangara* 70
Gypohierax angolensis 8
Gypoictinia 10
Gyps africanus 8
 — *bengalensis* 8
 — *fulvus* 8, 136, 138
 — *himalayensis* 8
 — *rupepellii* 8, 138

haematogaster, *Phloeoceastes* 69
Haematopus ater 80
 — *capensis* 78
 — *chathamensis* 80
 — *finschi* 80
 — *frazari* 80
 — *fuliginosus* 80
 — *galapagensis* 80
 — *leucopodus* 80
 — *meadewaldoi* 77–81
 — *moquini* 77–81
 — *niger* 78
 — *ostralegus* 77, 78, 80
 — *palliatu*s 80
 — *pitanay* 80
 — *pratti* 80
 — *unicolor* 80
Halcyon chloris 123, 126
Haliastur 9–11
 — *indus* 8, 11
 — *sphenurus* 8
Haliaeetus 9–11
 — *albicilla* 8
 — *leucocephalus* 8, 9
 — *leucogaster* 8
 — *pelagicus* 8
 — *vocifer* 8, 11
haliaeetus, *Pandion* 9
hamertoni, *Alaemon* 4
Hamirostra 9–10
 — *melanosternon* 8
Harpagus 9
 — *bidentatus* 8
Harpyhalieetus 9
Harpyia 10
 — *harpyja* 8
harpyja, *Harpyia* 8
Harpyopsis 9
harrisii, *Aegolius* 154
hattamensis, *Pachycephalopsis* 40–41
heliaca, *Aquila* 42

Heliodoxa gularis 155, 157
 — *leadbeateri* 50, 69
 — *schreibersii* 155, 157
Heliotheryx aurita 69
hemilasius, *Buteo* 8
hemileucurus, *Phlogophilus* 64, 67, 69,
 155, 157
Hemiprocne fucivora 18
 — *longipennis* 18
Hemispingus xanthophthalmus 56
Henicopernis longicauda 8
Henicorhina leucophrys 70
Hersilochmus axillaris 64, 67, 69
 — *rufimarginatus* 65
Heteroscelus incanus 123
Heterospizias 10
 — *meridionalis* 8
hiaticula, *Charadrius* 6
Hieraetus, *fasciatus* 8
himalayensis, *Gyps* 8
Himantopus himantopus 33
Hirundapus caudacutus 123
Hirundo obsoleta 34
 — *rustica* 34, 51, 75, 88
 — *tahitica* 126
hispaniolensis, *Passer* 34
hodgsonii, *Columba* 14–15
 — *Prinia* 15
hortensis, *Sylvia* 34
howelli, *Buccanodon* 96
humeralis, *Ammodramus* 52
 — *Caryothraustes* 55
humilis, *Ichthyophaga* 8
Hyloctistes subulatus 54
Hylophilus aurantiifrons 51
 — *flavipes* 51
 — *olivaceus* 70
Hylophylax naevia 69
Hypnelus ruficollis 50
hypoleuca, *Ficedula* 34
hypoleucos, *Tringa* 34

ibadanensis, *Malimbus* 72
ichthyaetus, *Ichthyophaga* 8
Ichthyoborus 10
Ichthyophaga 9, 11
 — *humilis* 8
 — *ichthyaetus* 8
 — *nana* 8
icterocephalus, *Agelaius* 129–130
icteropygialis, *Eremomela* 90
Icterus icterus 51
 — *nigrogularis* 51
Ictinaetus malayensis 8
Ictinia 9–11
 — *mississippiensis* 8, 9
 — *plumbea* 8
incanus, *Heteroscelus* 123
incertus, *Cuculus* 105
indicus, *Butastur* 8

- indus, *Haliastur* 8, 11
Inezia subflava 51
inornata, *Conopias* 48, 50, 130
insulindae, *Cuculus* 62-63
intercedens, *Lybius* 142-147
intermedia, *Sporophila* 52
intermedius, *Ploceus* 26
Iridophanes pulcherrima 70
isabellina, *Sylvietta* 89-90
isura, *Lophoictinia* 8

Jacana jacana 50
jacarina, *Volatinia* 52
jacksoni, *Ploceus* 26
jamaicensis, *Buteo* 8
javanica, *Dendrocygna* 93
javanicus, *Leptoptilos* 39-40
jeffereyi, *Pithecophaga* 8
johannae, *Doryfera* 69
jugularis, *Myzomela* 126

katangae, *Ploceus* 24-26, 29-30
Kaupifalco monogrammicus 8
kingi, *Aglaiocercus* 50, 69
Klais guimeti 69
krameri, *Psittacula* 16-17

lagopus, *Buteo* 8
Lalage maculosa 126
lanceolata, *Chiroxiphia* 50
 — *Micromonacha* 69
laniirostris, *Euphonia* 51
Laniisoma elegans 69
Lanio fulvus 70
Lanius excubitor 34
 — *garrulus* 84
 — *senator* 34
Larus ridibundus 33
larvata, *Coracina* 128-129
lateralis, *Zosterops* 126
Laterallus exilis 53, 55
 — *melanophaius* 53
latirostris, *Muscicapa* 148-152
latrans, *Ducula* 124-125
lawrencii, *Turdus* 157
leadbeateri, *Heliodoxa* 50, 69
Legatus leucophauius 70
lentiginosus, *Botaurus* 93
lepidus, *Cuculus* 62-63
Leptodon cayanaensis 8
Leptopogon superciliosus 51, 70
Leptopterus madagascarinus 132
Leptoptila verreauxi 49, 50
Leptoptilos javanicus 39-40
Leptosittacus branickii 154
leucocephalus, *Haliaeetus* 8, 9
leucogaster, *Haliaeetus* 8
leucomelas, *Lybius* 30
 — *Turdus* 51, 129
leuconotus, *Anaplectes* 73, 74

leucophauius, *Legatus* 70
leucophrys, *Henicorhina* 70
 — *Sylvietta* 89
(leucophthalmus), *Aratinga* 69
leucopis, *Atlappetes* 157
leucopodus, *Haematopus* 80
leucops, *Platycichla* 70
leucoptera, *Piranga* 70
Leucopternis albigularis 8, 69
 — *melanops* 8
leucopterus, *Nyctibius* 154
leucopygia, *Oenanthe* 35
 — *Tachycineta* 55, 56
leucorhynchus, *Artamus* 125
leucotis, *Smaragdolanus* 70
 — *Thryothorus* 51
leucurus, *Elanus* 8
licitor, *Pitangus* 51
limnaeetus, *Spizaetus* 9
Limnocorax flavirostris 140
Limosa limosa 33
linearis, *Chiroxiphia* 37
lineata, *Dacnis* 70
lineatus, *Buteo* 8
longicauda, *Henicopernis* 8
longipennis, *Hemiprocne* 18
longipes, *Myrmeciza* 50
longirostris, *Caprimulgus* 88
longuemareus, *Phaethornis* 50
Lophoetus occipitalis 8
Lophoictinia 9
 — *isura* 8
Lophotriccus pileatus 70
ludoviciae, *Doryfera* 69
lugubris, *Quiscalus* 51, 129-130
Lybius frontatus 30
 — *intercedens* 142-147
 — *leucomelas* 30
 — *macclounii* 142-147
 — *minor* 142-147

macclounii, *Lybius* 142-147
Machaerhamphus alcinus 8
Machetornis rixosus 50
macrourus, *Circus* 34
 — *Urotriorchis* 8
macularia, *Actitis* 69
maculosa, *Lalage* 126
 — *Nothura* 85
madagascarinus, *Cyanolanius* 132-135
 — *Leptopterus* 132
maderaspataana, *Zosterops* 132
magellanicus, *Carduelis* 87
 — *Spinus* 87
magnirostris, *Buteo* 8, 50, 69
major, *Crotophaga* 50
 — *Taraba* 50
 — *Tetrao* 85
 — *Tinamus* 85
malabarica, *Galerida* 106, 111-112

- malayensis, *Ictinaetus* 8
Malimbus 70–74
 — *ballmanni* 72
 — *cassini* 72, 73
 — *coronatus* 72
 — *erythrogaster* 72
 — *flavipes* 72
 — *golensis* 72
 — *ibadanensis* 72
 — *nitens* 73
 — *racheliae* 72
 — *rubriceps* 71–74
 — *rubricollis* 72
 — *scutatus* 72, 73
mallablensis, *Galerida* 111–112
Manacus 38
 — *aurantiacus* 37
 — *manacus* 37–38
marginatus, *Charadrius* 5–7
maritima, *Geositta* 88
Masius chrysopterus 70
maxis, *Turdus* 45
maximus, *Saltator* 70
meadowaldoi, *Haematopus* 77–81
Mecocerculus calopterus 66, 70
medius, *Tinamus* 55
Megarhynchus pitangua 50
Megatriorchis 9
melancholicus, *Tyrannus* 50, 70
Melanerpes rubricapillus 50
melanocephala, *Sylvia* 35
melanocephalus, *Ploceus* 25, 26, 30
melanogenys, *Adelomyia* 69
melanoleucus, *Accipiter* 8
 — *Circus* 8
 — *Geranoaetus* 8
 — *Spizastur* 8
melanonota, *Pulsatrix* 69
melanotis, *Anaplectes* 73, 74
melanophaius, *Laterallus* 53
melanops, *Coracina* 128
 — *Leucopternis* 8
melanorhynchus, *Thripadectes* 69
melanosternon, *Hamirostra* 8
melanosticta, *Rhegmatorhina* 156, 157
melanotis, *Coracina* 128
melanotus, *Odontophorus* 153, 154, 157
melanurus, *Ramphocaelus* 55
Melierax canorus 8
 — *gabar* 8
 — *metabates* 8
melindae, *Anthus* 106, 112–113
melitensis, *Grus* 141
mellisugus, *Chlorostilbon* 50, 69
meloryphus, *Euscarthmus* 51
mentalis, *Dysithamnus* 69
 — *Pipra* 37
mercenaria, *Amazona* 69
meridionalis, *Heterospizias* 8
Merops apiaster 34
metabates, *Melierax* 8
Metriopelia ceceliae 88
mexicanus, *Carpodacus* 131
 — *Gymnomystax* 51
Micrastur ruficollis 69
Micromonacha lanceolata 69
migrans, *Milvus* 8
Milvus 9–11
Milvus migrans 8
Mimus gilvus 51
miniatus, *Myioborus* 70
minimus, *Catharus* 51
minor, *Lybius* 142–147
minuta, *Calidris* 34
 — *Columbina* 50
 — *Sporophila* 52
Mionectes olivaceus 51, 70
 — *striaticollis* 70
Mirafr 106
Mirafr ashi *sp. nov.* 107, 108
Mirafr sharpei 108
 — *somalica* 4, 106–110
Mirafr somalica rochei *subsp. nov.* 110
mississippiensis, *Ictinia* 8, 9
modestus, *Progne* 88
Modulatrix 98
 — *orostruthus* 97–98
Modulatrix orostruthus sanjei *subsp. nov.* 97
Molothrus 130
 — *ater* 130–131
 — *bonariensis* 51, 129–131
monachus, *Aegyptius* 8, 138
monogrammicus, *Kaupifalco* 8
montana, *Sylvia* 61
moquini, *Haematopus* 77–81
Morphnus 10
 — *guianensis* 8, 69
mosquitus, *Chrysolampis* 50
Motacilla alba 34
 — *cinerea* 34
 — *flava* 34
murina, *Phaeomyias* 51
Muscicapa latirostris 148–152
Muscicapa latirostris umbrosae *subsp. nov.* 149
Muscicapa striata 34
 — *williamsoni* 148–152
mutata, *Terpsiphone* 132
Myiagra vanikorensis 125, 126
Myiarchus cephalotes 70
 — *ferox* 51
 — *tuberculifer* 70
 — *tyrannulus* 51
Myiobus villosus 70
Myioborus miniatus 70
Myiopagius viridicatus 51
Myiophobus cryptoxanthus 65, 68, 70
 — *fasciatus* 51, 65
 — *phoenicomitra* 65, 67, 70
 — *roraimae* 65, 67, 70

- Myiotriccus ornatus* 70
Myiozetes cayanensis 50
 — *similis* 50, 70
Myospiza aurifrons 70
Myrmeciza longipes 50
Myrmornis torquata 156
Myrmotherula schisticolor 69
mytaceus, *Platyrinchus* 70
Myzomela jugularis 126

naevia, *Hylophylax* 69
nana, *Ichthyophaga* 8
 — *Sylvia* 34
nattamensis *Pachycephalopsis* 40-41
nebularia, *Tringa* 34
negevensis, *Torgos* 137-138
Nemosia pileata 52
Neopelma 39
Neophron percnopterus 8
niger, *Haematopus* 78
nigrescens, *Caprimulgus* 119-122
 — *Cereomacra* 69
nigricans, *Sayornis* 70
nigricollis, *Busarellus* 8, 10
 — *Sporophila* 52
nigrofumosus, *Cinclodes* 87
nigroregularis, *Icterus* 51
 — *Ramphocelus* 51
nipalensis, *Spizaetus* 9
nisus, *Accipiter* 8
nitens, *Malimbus* 73
nitidus, *Buteo* 8
Nonnula ruficapilla 53
Nothura maculosa 85
Notiochelidon cyanoleuca 49, 51, 55, 70
 — *flavipes* 156
Notiospiza 71
novae-hollandiae, *Coracina* 127
novaeboracensis, *Seiurus* 51
nubicus, *Torgos* 137-138
nuchalis, *Campylorhynchus* 51
 — *Glareola* 116
nudigenis, *Turdus* 49, 51
Nyctibius leucopterus 154
Nycticorax nycticorax 34, 92-93
Nyctidromus albigollis 50

obbiensis, *Calandrella* 4
obscura, *Sporophila* 52
obsoleta, *Hirundo* 34
obsoletum, *Camptosoma* 51
obsoletus, *Crypturellus* 69
occipitalis, *Lophoaetus* 8
 — *Trigonoceps* 8
ochropus, *Tringa* 33
Ocreatus underwoodii 69
ocularis, *Ploceus* 25
Odontophorus melanotus 153, 154, 157
 — *sp.* 69
Odontorchilus branickii 70

Oenanthe leucopyga 35
 — *oenanthe* 35
olivacea, *Carduelis* 70
olivaceum, *Buccanodon* 95-96
olivaceus, *Hylophilus* 70
 — *Mionectes* 51, 70
ophthalmicus, *Pogonotriccus* 70
Opithoprora euryptera 155
orbitalis, *Phylloscartes* 156, 157
orenocensis, *Saltator* 52
ornatus, *Cephalopterus* 69
 — *Myiotriccus* 70
 — *Spizaetus* 9
Oroaetus 9
orostruthus, *Modulatrix* 97-98
oryzivorus, *Dolichonyx* 88
Oryzoborus crassirostris 52
ostralegus, *Haematopus* 77, 78, 80
Otus scops 34

Pachycephala 41
Pachycephalopsis nattamensis 40-41
 — *poliosoma* 40-41
Pachyrhamphus versicolor 69
pacifica, *Ducula* 124
palliatu, *Haematopus* 80
 — *Thamnophilus* 69
pallidus, *Anthus* 113
 — *Charadrius* 5-7
palmarum, *Thraupis* 70
Pandion 10
 — *haliaetus* 9
Parabuteo 10
Parabuteo unicinctus 8
paraogularis 52, 131
Parula pitayumi 70
parva, *Porzana* 139-140
parvirostra, *Elaenia* 51
parvirostris, *Chlorospingus* 69
parzudakii, *Tangara* 70
Passer domesticus 87, 88
 — *hispaniolensis* 34
 — *simplex* 35
passerinus, *Forpus* 50
pastazae, *Galbula* 155, 157
pecuarius, *Charadrius* 5-6
pelagicus, *Haliaeetus* 8
(pelzelni), *Pseudotriccas* 70
percnopterus, *Neophron* 8
peregrina, *Vermivora* 51
peregrinus, *Falco* 87, 88
Pernis apivorus 8
perousii, *Ptilinopus* 125
personata, *Coracina* 127
personatus, *Trogon* 69
pertinax, *Aratinga* 50
peruviana, *Rupicola* 69
petechia, *Dendroica* 51
Petrochelidon fulva 88
Phacellodomus rufifrons 48, 50

- phaenicomitra, *Myiophobus* 65, 67, 70
Phaeomyias murina 51
Phaethornis augusti 50
 — *guy* 69
 — *longuemareus* 50
 — *sp.* 69
Phalacrocorax bougainvillii 87
Phalaropus fulcarius 85
 — *lobata* 85
 — *tricolor* 114–115
Pharomachrus antisianus 69
Phasianus colchicus 35–37
 — *versicolor* 35–37
Phigys solitarius 123
philippae, *Sylvietta* 89–91
philippensis, *Gallirallus* 124
Philomachus pugnax 34
Philydor rufus 69
Phloeocastes haematogaster 69
Phlogophilus hemileucurus 64, 67, 69,
 155, 157
phoeniceus, *Agelaius* 130
Phyllastrephus flavostriatus 96–97
Phyllastrephus flavostriatus
***unzungwensis subsp. nov.* 96**
Phylloscartes orbitalis 156, 157
Phylloscopus collybita 35
 — *sibilatrix* 35
 — *trochilus* 35
Piaya cayana 50, 69
pica, *Fluvicola* 50
Piculus rubiginosus 69
Picumnus squamulatus 50
 — *steindachneri* 64, 67, 69
picus, *Xiphorhynchus* 50
pilaris, *Atalotriccus* 51
pileata, *Nemosia* 52
pileatus, *Coryphospingus* 52
 — *Lophotriccus* 70
Pionus sordidus 69
Pipile pipile 69
Pipra 38
 — *coronata* 37
 — *mentalis* 37
Pipreola (frontalis) 69
Piprites chloris 70
Piranga leucoptera 70
pitana, *Haematopus* 80
pitangua, *Megarhynchus* 50
Pitangus lictor 51
 — *sulphuratus* 49, 50
Pithecophaga jeffereyi 8
pitiayumi, *Parula* 70
Pitylus grossus 70
Platycichla leucops 70
platypterus, *Buteo* 8
Platyrinchus mystaceus 70
Plegadis falcinellus 34
Ploceus 71–74
 Ploceus cucullatus 29, 30
 — *dicrocephalus* 26
 — *intermedius* 26
 — *jacksoni* 26
 — *katangae* 24–26, 29–30
 — *melanocephalus* 25, 26, 30
 — *ocularis* 25
 — *reichardi* 24–27, 29–31
 — *rubiginosus* 30
***Ploceus ruweti sp. nov.* 26, 27–30**
Ploceus subaureus 30
 — *taeniopterus* 25
 — *tahatali* 25
 — *upembae* 25–26, 29–30
 — *velatus* 24–25, 29–30
 — *vitellinus* 24–25, 30
 — *xanthops* 25, 30
 — *xanthopterus* 29, 30
plumbea, *Columba* 69
 — *Ictinia* 8
 — *Polioptila* 51
Poecilodryas 41
Poecilotriccus capitale 66, 68, 70
Pogonocichla 98
Pogonotriccus ophthalmicus 70
Polemaetus bellicosus 9
poliocephalus, *Cuculus* 62–63
Polioptila plumbea 51
poliocoma, *Pachycephalopsis* 40–41
pollens, *Coracina* 128–129
Polyboroides typus 8
Polyplaneta aurescens 155
polysoma, *Buteo* 8
pomarina, *Aquila* 8
Popelaria popelarii 69
popelarii, *Popelaria* 69
porphyraceus, *Ptilinopus* 123, 125
Porzana parva 139–140
 — *porzana* 140
 — *pusilla* 140
pratti, *Haematopus* 80
Premnoplex brunnescens 69
primigenia, *Grus* 141
Prinia gracilis 2–4
 — *hodgsoni* 15
prionurus, *Cuculus* 105
Progne modestus 88
promeropirhynchus, *Xiphocolaptes* 69
psaltria, *Carduelis* 52
Psarocolius 70
Pseudotriccus (pelzelni) 70
Psittacula krameri 16–17
Ptilinopus perousii 125
 — *porphyraceus* 123, 125
pugnax, *Philomachus* 34
pulcherrima, *Iridophanes* 70
Pulsatrix melanota 69
punctatus, *Tangara* 70
punctigula, *Chrysoptilus* 50
purpurea, *Ardea* 34

- pusilla, Porzana 140
 Pycnonotus cafer 124
 pygargus, Circus 8
 Pyrocephalus rubinus 50, 88
 Pyroderus scutatus 69
 Pyrrhomyias cinnamomea 70
 pyrrhophanus, Cacomantis 125

 Quelea 71, 73
 querquedula, Anas 33
 Quiscalus 130
 — lugubris 51, 129–130
 — quiscal 130
 quiscal, Quiscalus 130

 racheliae, Malimbus 72
 ralloides, Ardeola 34, 92
 Rallus aquaticus 33
 Ramphastos ambiguus 69
 Ramphocaenus melanurus 55
 Ramphocelus carbo 51
 — nigrogularis 70
 Ramphotrigon fuscicauda 156, 157
 rapax, Aquila 8, 42
 regalis, Buteo 8
 reichardi, Ploceus 24–31
 renatae, Serinus 12–14
 Rhegmatorhina melanosticta 156, 157
 Rhinoploceus 73
 Rhodinocichla rosea 51
 Rhodopechys githaginea 34
 Rhodopsis vesper 86
 Rhynchocyclus fulvipectus 65, 68, 70
 Rhytipterna simplex 70
 richardsoni, Eubucco 53
 ridgwayi, Buteo 8
 ridibundus, Larus 33
 riocourii, Chelictinia 8
 Riparia riparia 34
 rivularis, Basileuterus 70
 rixosus, Machetornis 50
 rodgersi, Swynnertonina 98
 roraimae, Myiophobus 65, 67, 70
 rosea, Rhodinocichla 51
 Rostrhamus 9
 — sociabilis 8
 rubetra, Saxicola 34
 rubiginosus, Automolus 69
 — Piculus 69
 — Ploceus 30
 rubinus, Pyrocephalus 50, 88
 rubricapillus, Melanerpes 50
 rubricata, Cuculus 100
 — Sylvia 101–105
 rubricatus, Cacomantis 102–105
 — Cuculus 102–105
 rubriceps, Anaplectes 71–74
 — Malimbus 71–74
 rubricollis, Malimbus 72
 rueppellii, Gyps 8, 138

 rufescens, Sylvieta 89
 ruficapilla, Nonnula 53
 — Sylvieta 89
 ruficauda, Galbula 50
 ruficollis, Corvus 55
 — Hypnelus 50
 — Micrastur 69
 — Stelgidopteryx 51, 70, 75–77
 ruficrissa, Urosticte 154
 rufifrons, Phacellodromus 48, 50
 rufigularis, Sclerurus 156
 rufimarginatus, Herpsilochmus 65
 rufinus, Buteo 8
 rufipectus, Formicarius 69
 rufofuscus, Buteo 8
 rufulus, Cuculus 100–105
 rufus, Philydor 69
 — Tachyphonus 48, 51
 Rupicola peruviana 69
 rustica, Hirundo 34, 51, 75, 88
 rutila, Setophaga 51
 rutilans, Xenops 69
 rutilus, Thyrothorus 51
 rutilus, Cypseloides 69
 ruwetii, Ploceus 26–30

 sacra, Egretta 125
 Sakesphorus canadensis 50
 Saltator albicollis 52
 — caerulescens 49, 52
 — maximus 70
 — orenocensis 52
 sanjei, Modulatrix 97
 Sapayoa 39
 Sarcogyps calvus 8, 138
 saturatus, Cuculus 62–63
 Saxicola rubetra 34
 — torquata 34
 Sayornis nigricans 70
 Scardafella squammata 50
 Schiffornis turdinus 38, 39, 70
 schistacea, Coracina 128–129
 Schistes geoffroyi 69
 schisticolor, Myrmotherula 69
 schoenobaenus, Acrocephalus 34
 schrankii, Tangara 70
 schreibersii, Heliodoxa 155, 157
 Sclerurus rufigularis 156
 scops, Otus 34
 scutatus, Malimbus 72
 — Pyroderus 69
 Scytalops femoralis 69
 Seiurus noveboracensis 51
 semifasciata, Tityra 69
 semitorquata, Ficedula 34
 senator, Lanius 34
 senegalensis, Streptopelia 33
 sericocaudatus, Caprimulgus 53, 56
 Serinus estherae 12–14
Serinus estherae renatae subsp. nov. 12

- Serpophaga cinerea* 70
Setophaga ruticilla 51
sharpei, *Mirafra* 108
sibilatrix, *Phylloscopus* 35
Sicalis, flaveola 52
similis, *Myiozetetes* 50, 70
simplex, *Passer* 35
— *Rhytipterna* 70
singularis, *Xenerpestes* 63, 69
Sittasomus griseicapillus 69
Smaragdolanus leucotis 70
sociabilis, *Rostrhamus* 8
solitaria, *Tringa* 50, 69
solitarius, *Phigys* 123
somalica, *Mirafra* 4, 106–110
sordidus, *Pionus* 69
speciosum, *Conirostrum* 51
sphenurus, *Haliastur* 8
Spilornis cheela 8
Spinus magellanicus 87
Spizaetus cirrhatus 8
— *limnaeetus* 8
— *nipalensis* 8
— *ornatus* 8
— *tyrannus* 8
Spizastur melanoleucus 8
spodiopygia, *Collocalia* 124
Sporophila 131
— *castaneiventris* 70
— *intermedia* 52
— *minuta* 52
— *nigricollis* 52
— *obscura* 52
squamata, *Scardafella* 50
squamulatus, *Picumnus* 50
stairii, *Gallucolumba* 123, 125
steindachneri, *Picumnus* 64, 67, 69
Stelgidopteryx ruficollis 51, 70, 75–77
stellaris, *Botaurus* 93
Stephenoaetus coronatus 8
Sterna bergii 125
Sternoclyta cyanopectus 50
stictolaema, *Deconychura* 155, 157
striata, *Muscicapa* 34
striaticollis, *Anabacerthia* 69
— *Mionectes* 70
striatus, *Accipiter* 8, 69
— *Butorides* 50
Streptopelia bitorquata 23
— *chinensis* 22–23, 125
— *senegalensis* 33
— *turtur* 34
strigilatus, *Ancistrops* 54
subalaris, *Syndactyla* 69
subaureus, *Ploceus* 30
subflava, *Inezia* 51
subpallida, *Coracina* 128
subulatus, *Hylocistis* 54
Sula variegata 87
sulcirostris, *Crotophaga* 50
sulphuratus, *Pitangus* 49, 50
sulphurens, *Tolomyias* 51, 70
superciliaris, *Leptopogon* 51, 70
swainsonii, *Buteo* 8
— *Gamsonyx* 8, 50
swynnertoni, *Swynnertonia* 98
Swynnertonia 98
— *swynnertoni* 98
Swynnertonia swynnertoni rodgersi
subsp. nov. 98
Sylvia borin 35
— *cantillans* 34
— *curruca* 14–15, 89
— *hortensis* 34
— *melanocephala* 35
— *montana* 61
— *nana* 34
— *rubricata* 101–105
sylvia, *Todirostrum* 51
Sylvietta 89
— *brachyura* 89–91
— *denti* 89
— *isabellina* 89–90
— *leucophrys* 89
— *phillipae* 89–91
— *rufescens* 89
— *ruficapilla* 89
— *virens* 89
— *whytii* 89
Synallaxis albescens 50
— *cinnamomea* 50
Syndactyla subularis 69
Synoicus ypsilophorus 124
tabuensis, *Aplonis* 126
Tachycineta leucopyga 55, 56
Tachyphonus rufus 48, 51
taeniopterus, *Ploceus* 25
tahatali, *Ploceus* 25
tahitica, *Hirundo* 126
talpacoti, *Columbina* 49, 50
Tangara 56, 66
Tangara arthus 51, 70
— *cayana* 51
— *chilensis* 70
— *chrysotis* 66, 68, 69, 70
— *cyanicollis* 70
— *cyanoptera* 51
— *cyanotis* 70
— *gyrola* 70
— *parzudakii* 70
— *punctatus* 70
— *schrunkii* 70
— *xanthocephala* 70
Taraba major 50
tenebrosa, *Chelidoptera* 75
Terathopius ecaudatus 8
Terpsiphone mutata 132
Tetrao major 85
thalassinus, *Colibri* 50

- Thalurania furcata* 69
Thamnistes anabatinus 69
Thamnophilus doliatus 50, 65
 — *palliat* 69
Thaumastora cora 86
thoracicus, *Cyphorhinus* 70
Thraupis cyanocephala 70
 — *episcopus* 49, 51, 70
 — *glaucocolpa* 51
 — *palmarum* 70
Thripadectes melanorhynchus 69
Thryothorus leucotis 51
 — *rutilus* 51
Tiaris bicolor 52
tibicen, *Gymnorhina* 127
Tinamus major 85
 — *medius* 85
tinnunculus, *Falco* 34
Tityra semifasciata 69
tobaci, *Amazilia* 50
Todirostrum cinereum 51, 70
 — *sylvia* 51
Tolomyias flaviventris 51
 — *sulphurescens* 51, 70
Torgos tracheliotus 8, 135–138
torquata, *Myrmornis* 156
 — *Saxicola* 34
torquatus, *Turdus* 34
totanus, *Tringa* 33
tracheliotus, *Torgos* 8, 135–138
triangularis, *Xiphorhynchus* 69
tricolor, *Phalaropus* 114–115
Trigonoceps occipitalis 8
Tringa fulvicaria 85
 — *hypoleucos* 34
 — *lobata* 85
 — *nebularia* 34
 — *ochropus* 33
 — *solitaria* 50, 69
 — *totanus* 33
trinitatis, *Euphonia* 51
tristis, *Acridotheres* 127
tristriatus, *Basileuterus* 70
trochilirostris, *Campyloramphus* 50
trochilus, *Phylloscopus* 35
Troglodytes aedon 51, 70
Trogon personatus 69
tschudii, *Ampeliodes* 69
tuberculifer, *Myiarchus* 70
turdinus, *Schiffornis* 38, 39, 70
Turdoides fulvus 35
Turdus albigollis 70
 — *fischeri* 45–47
***Turdus fischeri maxis* subsp. nov.** 45
Turdus lawrencii 157
 — *leucomelas* 51, 129
 — *nudigenis* 49, 51
 — *torquatus* 34
turtur, *Streptopelia* 34
typus, *Polyboroides* 8
- Tyrannetes* 39
Tyranniscus vilissimus 51
 — *viridiflavus* 70
tyrannulus, *Myiarchus* 51
Tyrannus melancholicus 50, 70
 — *tyrannus* 88
tyrannus, *Spizaetus* 9
- umbrosa*, *Muscicapa* 149–150
uncinatus, *Chondrohierax* 8
unicinctus, *Parabuteo* 8
underwoodii, *Ochreatus* 69
unicolor, *Chloropipo* 70
 — *Haematopus* 80
upembae, *Ploceus* 25–26, 29–30
Upupa epops 34
urbica, *Delichon* 34
Urochroa bougueri 64, 67
Urosticte benjamini 154
 — *ruficrista* 154
Urotriorchis macrourus 8
urubitinga, *Buteogallus* 8
uzungwensis, *Phyllastrephus* 96
- Vanellus vanellus* 33
vanikorensis, *Myiagra* 125, 126
variegata, *Sula* 87
variolosus, *Cacomantis* 100–105
velatus, *Ploceus* 24–25, 29–30
Veniliornis fumigatus 69
Vermivora peregrina 51
verreauxi, *Leptoptila* 49, 50
verreauxii, *Aquila* 8
versicolor, *Eubucco* 54
 — *Phasianus* 35–37
 — *Pachyramphus* 69
verticalis, *Creurgops* 70
vesper, *Rhodops* 86
vilissimus, *Tyranniscus* 51
villosus, *Myiobius* 70
virens, *Sylvietta* 89
Vireo gilvus 70
virescens, *Butorides* 93
viridicata, *Myiopagis* 51
viridiflavus, *Tyranniscus* 70
vitellinus, *Ploceus* 24–25, 30
vitiensis, *Clytorhynchus* 126
 — *Columba* 125
vocifer, *Haliaeetus* 8, 11
Volatina jacarina 52
vulcania, *Cettia* 61
Vultur gryphus 87
- wahlbergi*, *Aquila* 8
whytii, *Sylvietta* 89
williamsoni, *Muscicapa* 148–152
woodwardi, *Buccanodon* 95–96
 — *Cryptolybia* 95
- xanthocephala*, *Tangara* 70

xanthogaster, Euphonia 70
 xanthophthalmus, Hemispingus 56
 xanthops, Ploceus 25, 30
 xanthopterus, Ploceus 29, 30
 Xenerpestes singularis 63, 69
 Xenops rutilans 69
 Xiphocolaptes promeropirhynchus 69
 Xiphorhynchus guttatus 50
 — picus 50
 Xiphorhynchus triangularis 69

yarrellii, Eulidia 86
 yncas, Cyanocorax 51, 70
 ypsilophorus, Synoicus 124

zonaris, Streptoprocne 69
 Zonotrichia capensis 88
 Zosterops lateralis 126
 — maderaspatana 132

CORRIGENDA

Bull. 102, 1982

- p. 23, lines 10, 12: '*bitorquata*' not '*biatorquata*'
 p. 37, 3 lines from foot: 'suboscine' not 'subossine'
 p. 42, line 6: '*A. rapax raptor*' not '*A. r. raptor*'
 p. 43, line 24: 'Hon Secretary' not 'Non Secretary'
 p. 45, line 14: '**Turdus fischeri maxis**' not '**Turdus fisheri maxis**'
 p. 62, line 41: 'additional evidence' not 'additio nalevidence'
 p. 64, lines 29, 34: '*bougueri*' not '*bougeri*'
 p. 67, Table 1: '*hemileucurus*' not '*hemeleucurus*'
 p. 70, line 6: '*Tolmomyias sulphurens*' not '*Tolmomyiass ulphurens*'
 p. 70, line 7: '*Poecilotriccus capitale*' not '*P. capitale*'
 p. 135, title: '*Torgos*' not '*Torgus*'
 p. 138, line 11: 'Bruun' not 'Brunn'
 No. 3 Back Cover, Contents, line 7: 'Somadikarta' not 'Somardikarta'
 No. 4 Back Cover, Contents, line 9: '*Cyanolanius*' not '*Cyanolarius*'
 No. 4 Back Cover, Contents, line 11: '*Torgos*' not '*Torgus*'

